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PRINCIPLES OF COOKING A MANUAL OF LABORATORY PROCEDURES IN FOOD PREPARATION

MATILDE P. GUZMAN

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PRINCIPLES OF COOKING

A MANUAL ON LABORATORY PROCEDURES IN FOOD PREPARATION

By

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1955
QUEZON CITY, PHILIPPINES

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Introduction

Note to the teacher:

For beginners instruction in food preparation requires demonstration by the teacher then actual preparation of products by the students after a study of principles involved in the lesson.

Lesson should be limited as much as possible to one and one half hour-periods. A minimum of two laboratory periods a week for each topic in the lecture has been found to give the students sufficient proficiency in food preparation provided the class groups are kept small and the work carefully organized to allow rotation of tasks among members of the group.

Organize a class of 30, preferably 18 to 24, into six groups. Assign each group to a kitchen unit. Have no more than three different products each laboratory day, two groups doing the same recipe.

Plan the market order for the class and have the ingredients and special utensils such as pressure cookers steamer, cake pans etc. which may not be found in the group lockers, on trays for each group before the laboratory hour.

Give the class 50 to 60 minutes to finish their preparation, 15 to 20 minutes to sample and evaluate their products and 10 minutes to wash and clear their units.

If two housekeepers are assigned to check the kitchen units for order and cleanliness before the class goes, the kitchen will always be ready for another class to use.

Note to the students:

An understanding of the fundamentals of food preparation is the basis of proficiency in cooking. Recipes become more meaningful after these fundamentals are learned.

Plan your work in advance. Outline each step for the procedure, using the appropriate utensils for each step, and keeping the work surface clean, orderly, and free of unnecessary clutter.

Strive to improve your cooking by critically evaluating your products and doing the recipes alone outside the laboratory whenever possible.

See schedule of readings. Acquaint yourself with the vocabulary for each lesson and the application of principles in each recipe. List down important terms and their meaning on the blank spaces at the end of each lesson.

Identifying Utensils and Knowing Their Uses.:

Do the following lesson at home.

Identify in the laboratory and paste or draw utensils commonly used in food preparation.

Give the uses of each.

Liquid cup

Dry cup

Nested or Mary Ann Cups

Set of measuring spoons

Nested bowls, (1 qt.), (2 qt.), (3 qt.), (4 qt.)

Saucepans, (2 qt.), (3 qt.), (4 qt.)

Chicken fryer with cover

Griddle

Colander

Double boiler

Enamel utility bowl

Utility plate

Pressure cooker and its parts

Basting spoon

Wooden spoon

Turner

Kitchen knife

Paring knife

Peeler

Kitchen fork

Spatula

Layer cake pan

Pie pan

Loaf pan

Angel cake or tubed pan

Rectangular pan

Cook sheet

Strainer

Tea strainer

Rolling pin

Egg beater

Batter beater

Kitchen tongs

Measuring Ingredients, Time and Temperature in Cooking

1st Laboratory Period - Each group in the class will do the following exercises for this week.

I. Practice measuring the following ingredients accurately. Make 5 trials for each ingredient. Record results in tabulated form.

1. Cake Flour - Sift flour into a square of paper. With a tablespoon fill carefully a *tared cup heapingful of flour. Level with a spatula. Weigh. Are the weights for the different trials the same? Why?

Compare the weight of 1 c unsifted flour with a cup of the sifted one.

2. Repeat (1) using all-purpose flour.

3. Sugar-sift sugar to remove lumps. Measure and weigh as above.

4. Brown sugar - Break up lumps. Do not sift. Fill a cup packing down tightly. The sugar should hold the shape of the cup after being turned out. Level. Weigh.

5. Hydrogenated fat- Fill a cup packing down compactly. Weigh. How will temperature influence the volume measurement of the fat?

For printed butter, amounts needed may be marked off easily without placing fat in a cup. Butter comes in 1/2 lb. or 1/4 lb. print; one half lb. is equivalent to a cup.

Account for differences in weights of a cup of identical ingredient measured in the class.

Give the importance of accurate measures of ingredients in a recipe.

Give directions for measuring starch, cocoa or baking powder in small quantities of a tablespoon or so?

---

* A tared cup is a cup which is weighed before filling

it with the ingredient to be weighed. If a dietetic scale is used it is not necessary to record the weight of the cup before filling it. Place the cup on the platform. Adjust the scale to zero. Weights read after placing food in the cup are net weights of the food. Use fractional cups for accuracy and efficiency.

Nested or Mary-Ann cups come in a set of 4 - 1, 1/2 c.

1/4c, 1/3 c.

INGREDIENTS	Weight of 1 c Carelessly measured ingredients	WEIGHT				
		1	2	3	4	5
1 c Cake flour & cup						
Weight of cup						
Net Weight						
1 c All-purpose flour & cup						
Weight of cup						
Net Weight						
1 c Sugar & cup						
Weight of cup						
Net Weight						
1 c Brown Sugar & cup						
Weight of cup						
Net Weight						
1 c Hydrogenated Fat & cup						
Weight of cup						
Net Weight						

II. Second Laboratory Period

A. Practice using the thermometer

Fill upper and lower pans of a double boiler with 2 cups of water each or a quantity deep enough to immerse the bulb of a thermometer. Record the time it took to raise the water to boiling point. Compare with other group.

Read the boiling point of the water in the lower pan __________ °C.

What is the highest temperature reached in the upper pan? ________________ °C.

What foods are best cooked below the boiling point or in a double boiler?

How is heat transferred in cooking?

How does it influence the rate of cooking?

What is boiling point?

Cooking period is usually counted from boiling temperature. Why?

How may you raise the boiling point of water?

Is there a difference in temperature between slow and vigorous boiling of water? For what food is each used?

B. Place an oven thermometer at the center of the lower rack of the oven. Heat the oven, setting the regulator to 350°F. Check the oven thermometer after 5, 10, 15 minutes. How long did it take to heat the oven to 350°F.?

initial temp. __________ °F
5 minutes __________ °F
10 minutes __________ °F
15 minutes __________ °F

Why is it important to check the oven temperature before baking?

When the same oven will be used by more than one group for this lesson, turn off heat, leave oven open and allow an interval of 10 minutes between tests. Record time and initial temperature and subsequent temperatures after 5, 10, & 15 minutes.

SUGAR COOKERY

1st Laboratory Period: - Demonstration

A. Crystallization of fondant.

1. Combine
   3 c. sugar
   1 1/2 c. water
   1/16 t. cream of tartar
   in a 2 quart saucepan.

2. Stir until sugar dissolves. Allow to boil and strain into another 2 quart saucepan using 4 thicknesses of "sinamay".

3. Continue boiling. Have the heat high for 10 minutes then reduce to low and continue boiling for another 10 minutes until the temperature is 14°C above the local boiling point of water#. A soft ball forms in cold water at this temperature. Regulate the heat so that boiling to 114°C will take place in 20 minutes.

4. Pour the syrup into a platter which is set on a rack (this will hasten cooling). A wet cloth may be placed at the bottom of the platter and wrung in cold water several times during the cooling period to hasten cooling of the fondant. Take care not to jar the platter too much. Why?

5. When the bottom of the platter feels comfortably warm or the syrup is 40°C beat the syrup with a spatula. Beat completely until the mass stiffens. Knead the mass and wrap in wax paper. Place in a jar with a tight-fitting lid.

   When will crystals form prematurely? spontaneously?

   What size of crystals forms in each case?

Why is it desirable to state the boiling point of a candy solution in degrees above the local boiling point of water rather than as a definite temperature?

If hot or boiling sirups are stirred what size of sugar crystals form?

How will you cook sugar coated peanuts with large crystals?

Compare the crystals formed when the syrup is beaten while hot and after it is cooled to 40°C?

What is the role of the cream of tartar in this product? What other substances are used in cake frostings to serve the same purpose? What is the difference between the use of corn sirup and of cream of tartar in fondants and frostings on the consistency of the product during storage?

B. Caramelization of sugar for brittle.

Use 3/4 c peanuts, 1 c sugar, 1/2 t. salt.

Method 1 - Use a heavy frying pan to caramelize sugar. Heat the pan. Add 1/4 c. of sugar and spread this on the hot pan. As the sugar starts to melt stir in the rest of the cup of sugar gradually. Regulate the heat to prevent the sugar from burning before all the sugar has melted. (Too rapid heating will form a bitter product). Add 3/4 c peanuts and salt. Blend with the syrup thoroughly. Pour on to a greased board. Flatten with a greased rolling pin or cleaver to 1/3 inch thickness. Cut up to 3/4" x 2" pieces. Work fast before the candy hardens.

Sugar will caramelize in solution when heated to a high temperature, 160 to 170°C.

Variation: 1/4 t. baking soda may be added to the melted sugar in the pan before adding the peanuts. A porous brittle results. Baking soda hastens the caramelization of the sugar and can make the candy bitter if too much is added.

What products are formed when sugar caramelizes? How does caramelized sugar differ from the original sugar in sweetness and solubility? What are some uses of caramelized sugar in native cooking?

Method 2 - Combine:
1 c sugar
1/2 t. salt
1/4 c. water

Heat until light brown
Add peanuts. Follow the rest of the steps in the procedure above.

2nd Laboratory Period:

Group 1 & 4

I. Fudge: Prepare:
buttered platter
1 c chopped peanut
2 tb. butter on square of paper
vanilla

In a 2-qt. saucepan
Combine
2 c sugar
1/4 c cocoa
1 tb. light corn sirup or 1/4 t. cream of tartar
1 c evaporated milk
1/4 t. salt

Stir over medium heat until sugar dissolves. Bring the sirup slowly to boiling point, stirring constantly until the mixture forms a soft ball. Cooking may take 10 to 12 minutes after syrup starts to boil. (Note: Remove the saucepan from the stove when making the test in cold water. Why?

Remove the saucepan from the stove and set it over a pan of cold water. Cool until the bottom of the pan is comfortably warm or the sirup is 55°C. Add 2 tb. butter. Beat the candy sirup vigorously until it is soft and creamy.

Add 1/2 t. vanilla
Peanuts

Continue beating until the candy starts to stiffen. Pour into a greased platter. Spread to 1/2 inch thickness. Cool. Cut into squares 3/4" x 1 1/2".

Keep in a can with a tight fitting lid.

Group 2 & 5

Plain Caramel:

Prepare buttered platter. Chop nut meats if they are to be used.

In a 2-qt. saucepan

Combine 1 c sugar
1 c corn syrup
1 c evaporated milk
1/4 c butter

Cook over a slow fire, stirring constantly to prevent scorching. (Milk curdles and scorches when heated rapidly over a hot stove). "Cook until a portion separates into strings which are hard but not brittle when poured into cold water (117°C)". Over medium heat cooking may take 25 to 30 minutes after the syrup starts to boil.

Add 1 c. chopped peanuts. Pour into greased pan. When thoroughly cold, remove from the pan, flatten to 1/2" thickness on a board, 1 1/2" x 1 1/2" squares. Wrap in heavy wax paper and store.

Group 3 & 6 - Testing the different stages of candy cooking.

Prepare 2 sets of 7 saucers each for the different stages of cooking candy (thread, soft ball, firm ball, hard ball, soft crack, hard crack, caramel). Use one set (series) for the cold water test and the other set (series 2) for testing sirup without using water.

Combine 3 c. sugar
1 1/2 c. water
1/4 t. cream of tartar

Heat the sirup to different stages of cooking. Heat the sirup carefully so that samples of it may be taken at different stages without overheating the solution. Remove the pan from the stove when making the cold-water test. Test the temperature at each stage of cooking. Remove the pan from the stove and pour 1/2 teaspoon into each saucer of series 1 and series 2. Lift the sirup from the water and place it beside the sirup in the other saucer. Note that consistency of the sirup at different stages.

Continue cooking after each test until the caramel stage is reached. Remove pan from the hot stove to prevent burning. Use this caramel as a solution by dissolving in 1/2 c boiling water or pour onto greased board and make pulled candies. Work fast or candy will harden.

In what other ways is caramelized sugar used in the food industry?

Tabulate the stages of cooking as shown in you book (J.R.V. - Foods)

For candy products, the consistency in cold water should be that desired in the final candy.

What types of candies are illustrated in the foregoing recipes?

How was the size of crystals regulated in the fudge?

What will prove the type of candy that caramel represents?

How are amorphous candies formed?

ICECREAM AND SHERBETS

Ist Laboratory Period:

Demonstrate freezing and packing carabao's milk-macapuno sherbet.

1. Prepare freezing mixture. Break up the ice into fist size pieces. Place between two thicknesses of burlap bags (sako) pound with mallet to reduce the ice to the size of duhat or grape. Use an ice crusher if available or a mortar and pestle if desired.

Use the following ratios of salt to crushed ice by measure:

a. 1 to 4 for fast freezing
b. 1 to 8 for slow freezing

2. Fill the inner metal can of a 2 - qt. freezer with the following sherbet mixture:

5 c (1 1/4 qt.) carabao's milk heated over a low fire or in a double boiler with 1 1/3 c sugar to dissolve sugar

The freezer can should not be more than 2/3 full to allow for incorporation of air and macapuno. Cool all heated mixtures completely before starting to freeze.

3. Cover the metal can and adjust the crank in the bucket. Turn the crank to make sure that the crank turns smoothly.

4. Fill the bucket with salt and crushed ice (1 to 8)

The bucket may be filled one fourth full of ice before adding salt. Then salt and ice may be added alternately. Or, ice and salt may be combined before filling the bucket. Keep the bucket supplied with fresh ice and salt throughout the freezing period. Allow enough brine to form. Add 2 cups of cold water to dissolve salt, to start brine formation, and to hasten freezing.

* 5. Turn the crank slowly at first, using 40 r.p.m. for 5 minutes or until the crank starts to offer resistance.

Open the freezer can and add 1 c. shredded macapuno to the mixture. Continue freezing by turning the crank rapidly this time, 140 r.p.m. until the strongest member in the group cannot turn it at that rate. Remember to turn at a uniform rate. Why?

* Start counting time for r.p.m. when brine flows from the hole in the bucket.

6. Open the freezer. Remove the dasher. Pack down the mixture with a basting spoon. Work fast to prevent melting. Cover and plug the hole with a stopper. Discard old brine and fill quickly with fresh ice and salt using the higher ratio of salt (1 part salt to 4 parts ice). Pack down the ice in the bucket. Cover with several thicknesses of burlap bag. Allow to stand at least one hour. Be sure to keep the bucket supplied with ice and salt or the ice cream will melt. Add salt and crushed ice(1:4) every fifteen minutes. Why?

2nd Laboratory Period:

(Two groups work cooperatively. One prepares the ice and salt and another the ice cream mixture. Members of both group take turns in manipulating the crank. If the laboratory period is preceded by the lecture hour have the class start the preparation and freezing and while the products are left to ripen, meet the class for the lecture).

I. Plain Ice Cream:

5 c 18% butterfat cream
1 1/3 c sugar
1 t. vanilla
1 tb. granulated gelatin soaked in
1/4 c cold water

1. Heat cream in a double boiler with sugar. Add gelatin. Heat until gelatin dissolves. Cool completely. Add vanilla. Freeze.

2. Place the pan in the freezer bucket. Place the dasher, cover and adjust crank.

3. Fill the bucket with ice and salt as in the macapuno sherbet. Use 1 part salt and 8 parts ice.

4. Turn the crank slowly about 5 minutes until it begins to turn with difficulty. Then turn rapidly until it cannot turn anymore. Follow directions for freezing and packing in the demonstration.

5. Pack

II. Ice cream using egg and starch fillers:

1 c evaporated milk
1 c boiling water
2 tb. cornstarch
1 1/3 c. sugar

2 eggs, slightly beaten
1 t. vanilla

1. Mix sugar and starch thoroughly in a 2-qt. saucepan. Add boiling water. Stir and cook until thick and transparent. Cook over low heat 3 to 5 minutes after this.

2. Pour into beaten eggs in a bowl. Return this mixture to a double boiler and cook 3 to 5 minutes or until mixture coats a wooden spoon.

3. Combine with evaporated milk and vanilla. Cool before freezing.

4. Freeze in a 2-quart freezer following the directions in the preceding recipes.

III - Pinipig - Nanka Sherbet

1 1/2 c evaporated milk)   2 1/2 c. evap. milk
1 1/2 c hot water) or   1/2 c. hot water
1 c. 30% butterfat cream)

1 1/3 c. sugar
1/3 c. toasted pinipig
1/2 c. nanka, cut 1/2" x 1/2"

1. Combine sugar and hot water. When sugar is dissolved add evaporated milk and cream. *

2. Freeze, following directions in the demonstration.

3. Open freezer before turning the crank rapidly and add pinipig and nanka.

4. Ripen all products at least half an hour. Longer ripening is desired. Why?

Describe the qualities of good ice cream.

How do sherbets differ from ice cream?

What makes up the volume of the frozen products?

What do you mean by milk solids? Butterfat?

---

* If desired whip the cream and add together with the pinipig and nanka. The whipping of the cream may be

demonstrated as beginners often beat cream until it becomes buttery.

How do milk products differ in their butterfat?

Optional Recipe:

Creamy Banana Sherbet:

Prepare 3 tb. lemon juice (dayap)
2 t. lemon rind
Pass 6 ripe bananas thru a puree sieve.

Add lemon to banana and stir

Blend thoroughly: 1 can condensed milk
2 c milk

Freeze. Before turning the crank rapidly (140-r.p.m)
Add 2 stiffly beaten egg whites
Finish freezing
Pack and ripen at least 1 hour

Write out terms in this lesson and their definitions.

FRUITS AND VEGETABLES
Their Discoloration

Ist Laboratory Period:

Class assignment:

Groups 1 & 4 - Green vegetables
Groups 2 & 5 - Yellow and blue or red vegetables
Groups 3 & 6 - White or creamy white vegetables - Use cooked rice & onion

A. Pigments and their discoloration in cooking.

Use 1/4 k. each of green beans, carrots, purple cabbage and onion (or 1/2 cup cooked rice for white pigmented vegetables)

Cut the vegetables into uniform pieces of the size that is used for guisado (Slices, cubes or shredded as desired but use one shape for each vegetables cooked by different methods.

Divide the vegetable into 5 portions. Cook vegetables in boiling water. Keep the water boiling and cover the pan after three minutes boiling. Use a two quart saucepan for cooking the vegetable. Time cooking period and use the same for all methods used in one vegetable.

1. Leave one portion uncooked as control.
2. Cook a portion in 1 c boiling water. Time the cooking when the water resumes boiling. Cook until tender. Drain the water into a cup and place the vegetable on a saucer for observation of color change. Note the solubility of the pigment in water.
3. Repeat (2) adding 1 t. citric acid or acid juice to boiling water.
4. Repeat (2) adding 1/2 t. baking soda or calcium hydroxide to boiling water.
5. Repeat (2) adding 1/2 t. salt to boiling water.

TABULATE OBSERVATIONS

	Chlorophyll	Carotenoids	Anthocyanin	Flavone
Uncooked				
Plain Water				
Acid Water				
Alkaline Water				
Salty Water				

How stable are the pigments?

B. Discoloration due to tannins, enzyme and oxygen.

1. Broil eggplant over a strong flame until the skin is scorched and will loosen when rubbed off in water. Note any discoloration that may result from incomplete broiling.

2. Broil an eggplant slowly and incompletely. When broiled this way, the skin does not peel off but has to be pared. Note the brownish discoloration in areas which have not cooked thoroughly.

How does rapid broiling prevent discoloration of the eggplant?

How may you avoid discoloration of santol that is pared for preserve?

What fruits for salad or vegetables for guisado discolor during preparation? Give two examples for each. How is the discoloration minimized if not completely prevented in each?

C. Extracting color from annatto (achuete)

Melt 2 tb. fat over low heat. Add 1 tb. annatto (achuete). Keep the heat very low. When the fat is colored, strain the annatto. More color may be extracted from these seeds by using fresh fat. What can you say about the solubility of the pigment of annatto in fat? Do you get as much color in water? What is the significance of fat-extract annatto from the nutritive standpoint?

D. Sauteing Vegetables:

In a guisado, pounded garlic and sliced onion are sauted in fat until flavor develops. A combination of different ingredients-shrimps, pork, liver, bagoong, etc. is added to make up for the bland flavor of many vegetables. Seasonings used may be salt, fish or shrimp bagoong, patis, toyo. Liquid is supplied by using water, or pork or other meat stock, or shrimp extract. When toyo, patis or bagoong is used test these foods for saltiness. In the recipes below the amount of this seasoning may be increased or decreased by 1 or 2 tb. depending on their saltiness which varies with locally available products. It is suggested that a brand which has been tested for saltiness be used for all recipes.

RECIPES:

I. Stuffed Eggplant.

Ingredients	Measure	Directions
Garlic	1 segment-1 tb.	Pound
Onion	1 small- 1/4 c	Slice
Tomato	1 medium or 3 small -1/2 c	Cut finely or grind
Pork)	1 c	
Beef)		Grind mixture finely
Eggplant	3 medium (7to 8" long)	Broil and peel
Toyo	1 tb.	
Salt, pepper		
Fat	2 tb.	
Duck's eggs	2	Seperate white from yolks. Beat well, add yolk

Saute the garlic, onion, tomato and ground meat. Season with salt and pepper.

Prick the eggplant with a fork. Broil rapidly over a strong flame. Broil thoroughly. Immerse in a bowl of cold water and peel. Flatten on a plate. Season with salt and pepper. Place uniform amount of meat mixture in each eggplant.

Heat 2 tb. fat in a pan to fry the stuffed eggplant. Pour 2 tb. beaten egg. Slip the eggplant with the meat side on the egg. Cook over medium flame. Pour 1 tb. more of beaten egg in the pan and turn over the eggplant on this. A well coated eggplant results if care is used in turning the eggplant during the cooking.

If a pan is large two eggplants may be cooked at a time. A griddle is convenient for cooking this dish.

---

* Directions here are for preparation before cooking.

2nd Laboratory Period:

Group 1 & 4 - Lumpia

Ingredients	Wt.	Measure	Directions
Fat		5 tb.	
Annatto		1 tb.	
Pork	200 gms.	3/4 c.	Boil, separate lean, peel skin and slice fat & lean 1/4"thick. Cut skin finely.
# Shrimp, 3" long	200 gms.	1/3 c.	Par boil, peel and cut lengthwise
Stringbeans	1/4 k.	1/2 c.	Slice finely (diagonally)
Cabbage	1/2 k.	3 c.	Shred finely
Yellow sweet potato	1/4 k.	2 c.	Cut into strips 1/4" x 1/4" x 1 1/2"
Onion	1 med.	1/2 c.	Slice
Garlic	4 segments	1 tb.	Pound, set aside 1/4 t.for the sauce
Patis		2 tb.	
Salt		1 t.	
Pork stock		1/3 c.	
Lumpia wrapper 6" diameter		15 pieces	

Extract color from annatto (achuete) in fat or use achuete colored fat. Add pork fat to render some lard.Saute' garlic, onion, shrimp and pork. Add patis. Add stringbeans and continue sauteing. Allow an interval between additons of vegetables to prevent cooling the fat. Add cabbage, then sweet potatoes. Saute. Cover pan. Do not overcook. If the flame is carefully regulated the vegetable will cook in its own juices without scorching. Add pork or shrimp stock if the dish seems too dry. Season with salt.

Drain on a colander which is set on a plate to catch the stock.

Note: Use other vegetables for variation.

Lumpia Sauce (Use 1 1/2 times this sauce for the lumpia in the foregoing recipe).

Combine:		
	2 tb.	cornstarch
	2 tb.	toyo @
	1/2 tsp.	salt
	1/4 c.	brown sugar

# If shrimps are fresh, the heads may be pounded or ground and the extract used in place of the pork stock or combined with it. Use the head only from 1/2 of the shrimps in this recipe so that the flavor is not fishy. To use the heads, discard all the shells including the pointed portion in the head. Flavor comes from the head and not the shells.

Use ingredients according to specification in the recipe. @ If toyo is dark use only 1 tb.

Blend thoroughly in a saucepan. Add 1 c boiling water gradually and stir continuously over medium flame. Cook until starch has cooked flavor and the mixture is transparent and of medium thickness.

Separate the lumpia wrappers. Wash lettuce leaves thoroughly. Place lumpia wrapper on a plate. Spread over lumpia sauce at the center and on the edge half way around the wrapper. Lay lettuce leaf at the center of the wrapper. Do not allow to come out of the edge more than 1 1/2". Put a basting spoon of the lumpia mixture on the lettuce.

Roll lumpia carefully and tightly starting from the side of the wrapper without the sauce. The sauce on the edge seals the wrapper and makes a neat looking product. Have all lumpia of uniform size.

In placing lumpia on a platter use a strip of wax paper between layers of lumpia.

Serve lumpia with more sauce and pounded garlic. If lumpia dries up moisten it with the stock that drained from the colander.

Group 2 & 5 - Pinakbet (Guisado)

Ingredients		Measure	Directions
Pork	150 gms.	1 c	Boil, Separate skin, fat, and lean. Cut skin finely. Slice the rest 1/4" thick.
4 segments garlic		1 tb.	Pound
1 med. onion		1/2 c.	Slice
Tomatoes(3 small)		1/2 c.	Cut finely or ground
Bagoong		2 tb.	
Crackling#		6" x 6" square	Break into 1 1/2" squares
2 eggplants(8" long)		3 c.	Cut lengthwise, then crosswise 1 1/2 long & soak in water
1 amargoso (8" long)		1 1/2 c.	Same as eggplant
6 okra		1 c.	Cut 2" long
Ginger		1 tb.	Slice thinly
Fat		4 tb.	If pork is fatty reduce by 2 tb. as needed.
Water		1/2 c.	Use to soak eggplant.

Heat fat. Add pork fat to render lard. Saute' garlic, onion, ginger, tomatoes, pork and bagoong. Add crackling, eggplant, amargoso and okra (allow an interval between addition of vegetables). Add water used for soaking eggplant. Cover pan. Cook over medium heat for 5 to 7 minutes. Do not overcook the vegetables. Cook vegetables just before serving.

Note: Use other vegetables for variation.

# Omit, if desired but cook "cicharon" from additional fatty pork.

Group 3 & 6

Chop Suey:

Ingredients	Wt.	Measure	Directions
Pork	200 gms.	3/4 c.	Boil, separate lean from fat. Slice 1/4" thick; cut 1 1/4" square
1 onion, medium		1/2 c.	Cut into 8 pieces
Shrimps	200 gms.	1/3 c.	Par boil, peel, cut lengthwise
Carrots	150 gms.	3/4 c.	Slice 1/8"thick, 1 1/4" square
1 green pepper		3/4	Cut 1 1/4" square
Leeks	1/4 k.	2 c.	Cut 1 1/2" long, separate green from white end
Fat		4 tb.	
Toyo		1 t.	
Salt		1/2 t.	
Starch		2 t.	Combine with stock
Stock, shrimp or pork		1 c.	(see footnote, p.22

Heat fat, Add cut pork fat to render lard. Sauté onion, shrimps, leanpork, carrots, sweet pepper, leeks# (allow an interval between addition of ingredients and saute´ the mixture). Add the toyo. Cover the pan. Do not overcook vegetables. Have the vegetables tender crisp. Add starch dispersed in stock before the vegetables are done. Starch should have a cooked flavor.

Note: Use other combinations of vegetables for variation.

These groups may cook 3 c rice for the class.(see p.28).

#White ends first, green leafy ends last. Why?

Why is it important to cut vegetables in uniform thickness in a guisado? If not cut to the same thickness what sequence should be followed in adding vegetables?

FRUITS AND VEGETABLES
Their Flavor and Texture

Ist Laboratory Period:

Group 1 & 4 - Effect of calcium ion in lime water (apog) on pectin in fruits like condol.*

(To the teacher: Before the class comes pare and cut 1/2 k. candol in slices 1/" thick and 1 1/2" square. Soak in lime water using 1 tb. calcium hydroxide powder (apog) and 2 quarts water for at least two hours or overnight. Keep all pieces thoroughly immersed in water by weighting condol with saucers).

Use two 1/2 k. amounts of condol slices, cut as suggested for this lesson. Soak 1 portion of these in lime water and use the other fresh.

A. Condol soaked in lime water

1. Discard the lime water and wash condol in fresh water thoroughly. Blanch in boiling water and rinse in fresh water.

2. Heat condol in slowly boiling water until pieces are transparent and permeable to syrup. Drain the water.

3. Prepare syrup using 2 c. sugar and 1 c water. Have enough syrup to immerse the condol completely.

4. Add condol to boiling syrup and simmer in open suacepan for 5 minutes.

5. Allow condol to stand in syrup overnight or until next laboratory period. Cover condol with wax paper and weight down with a saucer to immerse all pieces in syrup.

6. Drain condol from the syrup. Boil the syrup 2 to 5 minutes to increase the concentration of sugar. Have enough syrup to cover the condol by increasing the amount if necessary. Use the same concentration of sugar when more syrup is needed.

7. Add condol and simmer 5 minutes or until desired viscosity is reached. Fruit preserves are finished in 65% syrup. How would you test this concentration of sugar?

8. If desired the condol may be cooked longer until sugar crystallizes. The resulting product is candied condol. If crystals of sugar are not desired on the condol what may you add to the syrup?

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* Use green papaya in place of condol if desired.

How is crystallization of sugar prevented in this way?

B. Use fresh condol - Follow steps 2 to 7 in A

Variations: Make maraschino style condol by scooping out cherry sized balls. Color balls red or green before cooking in syrup. Flavor syrup with almond extract using 1 tb. per pint of sugar.

Differentiate the products from the two treatments used. Account for the difference.

Why would hard water have a similar effect on texture?

For preserves or sweetened fruits like banana. Why is it necessary to cook fruits until tender before cooking them in syrup?

What is the effect on texture of cooking soft bananas in syrup? of under ripe bananas?

Give directions for preparing sweetened bananas (saba) that are uniformly transparent and tender but not mushy.

C. Effect of alkali on cellulose

1. Prepare a lye solution by combining in a non-metallic container (a glass bowl) about 1 tb. sodium hydroxide and 1 qt. boiling water. (sodium hydroxide is highly corrosive and should not be handled with bare hands nor allowed to come in contact with metals).

2. Wash uniformly ripe guavas or dry corn (soak overnight before the treatment).

3. Immerse fruits in lye solution, keeping the water hot. Keep the guavas in this solution until they darken. Keep the corn longer. (5 to 10 minutes).

4. With a wooden spoon remove guavas from the lye solution as pieces darken and immerse in a bowl of fresh water. Avoid soaking fruits especially soft ones too long. Why?

Use guavas as a sweetened product. Follow foregoing procedure for condol.

Use corn as hominy(binatog) by cooking in boiling water and serving with salt and grated coconut.

What cellulose is affected by alkali?

How was this shown in the previous lesson on vegetables?

How do heat and sugar affect texture of fruits and vegetables?

Group 2 & 5 - Effect of cooking on flavor of cabbage

A. Use 1/2 k. cabbage Shred
Divide into 4

1. Leave one portion raw.
2. Cook another in a pint of boiling water for 5 minutes. Do not allow water to dry up. Replace with boiling water if necessary.
3. Repeat (2) but boil 15 minutes.
4. Cook the last portion in a pressure cooker using 1 c water, 15 lbs. pressure, 15 minutes.

Compare the flavor and texture of the cabbage in 1 to 4.

Give directions for a desirable method of cooking strong flavored vegetables?

What other vegetables have similar flavor?

What flavor substances are found in these foods?

B. Cook Pesang Dalag or other fish desired.

Clean one dalag (mudfish) weighing 500 gms. Scrape the black pigment with the back of a knife after pouring warm vinegar over the fish.

Use apahap, bacoco, maya-maya, or talakitok
Set 3 c. rice water to boil.
Add 1 1/2" - piece ginger, slightly pounded.
1 t. salt
1/4 t. peppercorns (pamintang buo)
Add cut fish when water boils
Add 1 potato or chayote pared and quartered (1 1/2" squares)

1 stalk green onion
1 pechay, cut 2" long
1/5 k. (200 gms.) cabbage, cut 2" square
Serve with sauteed tomatoes, miso, or binagoongan pork.
The fish may be removed before adding the vegetables.
This will prevent mashing up the fish.
Dish out pesa so that vegetables and fish will be conveniently served.

Tomato sauce
1 segment garlic, pounded
1 small onion, sliced
4 med. tomatoes, minced or ground
2 tb. shrimp bagoong (alamang)
2 tb. fat
Saute in the usual manner.

C. Cook 3 cups rice to serve with the "pesa". Use rice water from this for the "pesa".

1. Pick rice over for palay and stones.
2. Wash the rice. Add amount of water found best for variety used.

3. Start cooking in a covered pan. When water is vigorously boiling, uncover pan. Continue boiling until rice has absorbed much of the water.

4. Cover saucepan tightly. Keep the flame very low. Cook 10 to 15 minutes longer. Rice will be noted to expand on the surface when cooked. Turn off heat after this. Remove rice from hot stove to prevent crust (tutong) the bottom.

Group 3 & 6 - Effect of sugar on texture.

Cook Bico -

1 1/2 c malagkit
2 c. cocomilk
1 t. salt
3/4 c. brown sugar
cococream from one coconut.

1. Wash 1 1/2 c malagkit and drain thoroughly.

2. From one grated coconut set aside 1/2 c to serve with bico.

3. Prepare coco cream and coco milk.

   a. For coco cream place grated coconut in a muslin bag wrung out of hot water. Squeeze the coco cream without adding water. Set aside for latik and oil.

   b. For coco milk use 2 c hot water for fractional extraction, i. e. divide the water into 3 portions and squeeze the coco-milk with each portion of warm water. Combine all three extractions. (Note: Use this method of extraction for all recipes which call for coconut milk).

4. Boil coco milk with 1 t. salt.

5. Add washed malagkit and cook until it has absorbed all the coco milk. Regulate the flame carefully to prevent scorching. (Malagkit scorches easily).

6. Finish the cooking by steaming. (Note cooking time) For a steamer use the skillet and a rack lined with banana leaves. Keep the skillet supplied with water to form steam. Cook 15 to 20 minutes. Malagkit must be cooked thoroughly. Malagkit may also be cooked in saucepan lined with two thicknesses of banana leaves to prevent scorching.

7. In a saucepan combine the cooked malagkit with 3/4 c brown sugar. Cook with stirring until mixture is thick.

8. Place oil on banana lined serving plate. Spread bico. Level surface. Score (that is, mark out diamond shape portions for serving.) Garnish each serving with latik. Serve with grated coconut.

2nd Laboratory period:

Group 1 & 4 - Finish the condol preserve. Serve the cooked corn (hominy) hot with grated coconut and salt.

Group 2 & 5 - Guinataan Halo-halo

(Have grated coconut before the class comes)

Extract coco cream from 2 grated coconuts (this measure about 8 cups.) Look up the method of extracting coco cream and coco-milk in the "bico" recipe.

Extract cocomilk using 4 1/2 c warm water in three portions.

Cut the following into uniform 5/8" cubes

Yellow sweet potato ------------- 1 c
White sweet potato -------------- 1 c
Saba banana --------------------- 1 c
Purple yam (ube) ---------------- 1 c
Nanka --------------------------- 1/2 c

Place cut sweet potatoes in some cocomilk to prevent discoloration.

Combine the rest of the cocomilk with 1 1/4 c. sugar. Boil. Add cut tubers banana and nanka. Keep the coco-milk boiling gently. Simmer in a covered pan. Note time of cooking. Stir only occasionally to avoid mashing up the tubers.

Before the tubers are thoroughly cooked thicken the liquid with 4 tb. cornstarch*dispersed in 1/2 c. water. Stir while adding the starch.

Finish cooking. Starch must have a cooked taste. Flavor with anis or cinnamon if desired.

Serve with coco cream.

Group 3 & 6-

A. Cooking dried vegetables (white beans)

Pork and Beans - (Soak beans before the class comes)

1. Cut into 1 1/2" cubes and soak in 1 t. toyo, 300 grams pork, (use pork sides or lliempo)
2. Wash and combine with pork 250 grams(______C) white dried beans*(soak at least 5 hours before cooking)
3. Add 1 1/2 c water and 1 medium onion, cut into 8 pieces.
4. Cook in a pressure cooker at 15 lbs. pressure for 30 minutes.(See footnote next page)
5. Add 1/2 bottle (3/4 c.) good catsup, 1 1/2 t. salt, 3 tb. sugar.
6. Thicken with 1 1/2 tb. starch dispersed in 2 tb. water.
7. Season with more salt if necessary and pepper, if desired. More lard may be added to improve flavor.

* Other starches may be used for thickening. Sago, tapioca, balls of malagkit meal, etc. Many variations may be made using different tubers.

* If beans were not soaked previous to cooking use 3 c. water

and cook at 15 lbs. for 40 minutes.

B. ONION OMELET

Slice 4 medium onions. Saute in 2 tb. fat. Set aside.
Separate whites from yolks of 3 duck's eggs.
Beat eggwhites until very foamy
Add 1 t. salt
Add 1 yolk. Beat well
Heat 1 tb. fat in a frying pan or a griddle. Pour beaten eggs in the fryer. Add sauted onion.
Prepare into a rolled omelet (this may be demonstrated).

Prepare 3 omelets from the ingredients above.

Compare the flavor of the onion in the Pork and Beans and in the omelet.

How do you account for the sweetish taste of onion?

Is this flavor true for many vegetables? Very often this flavor is lost in cooking. Why?

How would you minimize the strong flavor of vegetables?

What is done to santol before cooking in syrup to reduce the sour and astringent taste? orange peels?

What flavor substances account for this flavor of santol? of mango?

In the absence of a pressure cooker, use more water and cook at simmering temperature until soft.

JELLY MAKING

1 1/2

Ist Laboratory Period:

1. Extracting Juices:

Group 1 & 4

Guavas - Wash and cut off stems and blossom ends. Place in a saucepan and cover with water one half inch above the level of the fruits. The fruits may be weighed and the water measured. Allow 2 1/2 pints (5 c) of water for every kilogram of fruits. Boil five minutes. Count time from boiling point.

Drain the water into a bowl which is fitted with a colander. (Save the water for juice extraction). Return the softened guavas into the saucepan and mash with a wooden spoon. (Boiling facilitates breaking up the guavas and prevents discoloration. Avoid iron utensils. A discolored juice makes a dark jelly).

Combine water above and mashed guaves. Boil slowly in a covered saucepan for another 15 minutes. Stir occasionally to prevent sticking.

Line a colander with a moistened jelly bag * and place this on a bowl. Strain the juice. Twist the open end of the bag using only enough pressure to squeeze the juice but not the pulp. Pulp in the juice gives a cloudy jelly.

Second extraction - Transfer the pulp in the bag to a saucepan. Add water to cover or the amount used in the first extraction. Boil slowly in a covered saucepan for 15 minutes. Stir occasionally. Guavas tend to stick to the pan and scorch. Extract juice as before. Combine first and second extractions. Test for pectin and acid as directed.

Group 2 & 5

Santol or ripe tamarind - If santol is used blanch in boiling water for five minutes. Cut crosswise, remove seeds and cut the pulp into small pieces 1/8" thick. Combine seeds and cut pulp. Cover with hot water using two cups per quart of cut fruits. Boil slowly for twenty minutes. Strain through a jelly bag as for guava juice.

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* Fold a yard square of unbleached muslin (cacha) diagonally. Sew along edge. Use this for straining not only fruit juices but also coconut milk. Have several of this for the use of the class or at home.

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Second extraction - Follow directions for guava

Group 3 & 6

Papaya - Divide into quarters. Remove seeds. Pare. Grind in a food grind, shred on grater or cut 1/8 inch thick & 1 "square. For every quart of pulp add a pint of water and 2 tb. calamansi juice or 1 t. citric acid. Lack of acid in papaya results in less conversion of protopectin to pectin during boiling; hence, the pectin test with alcohol may not produce a good precipitate desirable for a successful jelly. Boil 15 minutes.

Second extraction - Follow directions for guavas.

TESTING THE JUICE FOR PECTIN

To two tbsp. of denatured alcohol *(95% wood alcohol) in a glass cup (a custard cup may be used) add 1 tbsp. of fruit juice carefully on the side of the glass. Shake the bottom of the cup gently. Pour into another cup. Note the precipitate of pectin. If a fruit juice is rich in pectin a mass of precipitate will form in alcohol. This precipitate can be lifted whole. A fruit juice which is poor in pectin will form a stringy precipitate or may make the alcohol only cloudy.

Observe pectin tests done on all fruit jucces extracted in the laboratory.

TESTING FOR ACID:

Prepare a standard acid solution by combining 1 tb. lemon juice with 1/2 c. water. Compare the acidity of the unsweetened fruit juice with this standard.

Fruit juices less acid than the standard may be [illegible] combined with a little fruit acid or commercial acid (citric or tartaric acid). Measure the acid by teaspoons or tablespoons per cup of fruit juice. Test the acidity of this sample juice, then adjust the acidity of the bulk of the juice, using the amount per cup in the test.

* Handle denatured alcohol carefully. It is poisonous.
The teacher may do the test on all juices of the class.
Test first and second extractions separately.

Fruit juice more acid than the standard may be combined with neutral fruit juices in a proportion to have the combined juices taste as acid as the standard. The acidity of all fruit juices should be tested **before adding** the sugar for jelly making.

Which fruit juices in the laboratory were as acid as the standard?

Which less acid?

Which more acid?

Keep a record of these tests for the different fruits used in the laboratory. Keep a record of the amounts of acid used per cup of fruit juice or the proportion of acid fruit juice to neutral juice. Store juices separately in stoppered bottles in the refrigerator until next laboratory period.

Tabulate results

	Pectin		Acid	
Fruit Juice	Ist Extraction	2nd Extraction	Ist Extraction	2nd Extractio
1.				
2.				
3.				

Report after the tabulation observations made on the finished jellies.

2nd Laboratory Period:

Cooking the jelly: -

(The teacher may demonstrate the cooking of a sample jelly before the groups make their own products)

Use the fruit juice which you extracted. Prepare jelly from 2 c. fruit juice at a time.

Note: Be sure that the juices have been tested for pectin and acid and that juices lacking in either are properly adjusted by combining fruit juices to supply the deficiency found in the tests. It may be necessary to test the juices for pectin and acid again before cooking the jelly.

Use 2/3 to 3/4 c. of sugar per cup of fruit juice. The amount of sugar to use depends on the pectin content of the fruit juice. A fruit juice found rich in pectin by the alcohol test may be cooked with the higher ratio of sugar. If the fruit juice is rich in pectin it is desirable to use the higher ratio of sugar because the sugar also influences the **yield** of the jelly.

Before cooking your jelly prepare sterile jelly glasses. Keep them warm and when ready to use set them on a firm rack or on two thickness of towel. Why?

Combine fruit juice and sugar in a 2 qt. saucepan. Boil until sugar dissolves completely. Strain juice through a clean moistened jelly bag. Set a colander in a 4 qt. saucepan and place the jelly bag on the colander to avoid handling a hot bag of juice.

Boil the juice as vigorously as possible until jellying point is reached. Do not stir the jelly. Why?

Testing the jellying point.

Thermometer test- The endpoint of jelly cooking ranges from 7.5° to 10.5°F above boiling point of water. (Review proper use of thermometer).

Sheeting test - Dip a wooden spoon into the jelly. Lift and note how jelly solution sheets from the edge of the sopoon. In the early stage of jelly cooking the solution falls by single drops. At jellying point the solution falls by sheets, that is, two drops combine at the edge of the spoon, to form a sheet before falling.

When jelly is done, allow the bubbles to subside completely. Pour into warm jelly glass. It may be necessary to place a square of clean sinamay over the jelly glass to strain off the scum or bubbles.

Set aside to cool undisturbed. Pour melted paraffin 1/8" thick before the jelly cools completely. Store jelly away from light.

When jelly has been stored for at least a day, turn it out of the glass and note the quality of the jelly. Compare your jelly products with the others made in the class.

Is it transparent and sparkling?

Does it quiver or does it flow?

Does it cut easily but is firm enough so that the angles that form retain their shapes?

Does it have a good flavor?

If your jelly did not set how may you account for it?

What may be done to remake a jelly that failed?

Preparing imitation strawberry jelly:

Use papaya juice or any juice which has a neutral flavor and color.

Cook a pint of papaya juice into jelly following the preceding procedure.

When the jellying point is reached add 6 drops of red food coloring, 1/2 t. strawberry extract.

Stir the jelly quickly and when bubbles have subsided pour into sterile jars. Cover with paraffin.

Preparing imitation mint jelly:

Follow directions for preparing strawberry jelly but use

4 drops green food coloring
1/4 t. mint flavor

Combining juices for jelly making

Combine a juice with a subdued flavor with one that has a distinct flavor. Ex. Papaya juice can be combined with almost all kinds of fruit juices because of its subdued flavor. Pineapple and guava juices may not be combined. Why?

Papaya juice may also be combined with different colored juices. However, orange colored juice may not be combined with a purple colored juice because the resulting jelly will be muddy looking.

STARCH COOKERY

Ist Laboratory Period

Group 1 & 4 - Effect of kind and amount of thickening agent and of sugar on the viscosity of starch gels.

I. Preparing starch gels from cornstarch and flour.

(Group 1 may do the cornstarch gels; Group 4, the flour gels).

A. Use the following proportions of thickening materials and water to obtain gels of different viscosity (thickness).

a. 1 tb. cornstarch	1 c water
b. 2 tb. cornstarch	1 c water
c. 3 tb. cornstarch	1 c water
d. 4 tb. cornstarch	1 c water

For this lesson use only half measure, that is, for (a) 1/2 tb. cornstarch and 1/2 c water; (b) 1 tb. cornstarch and 1/2 c water, etc. but try to remember basic proportions of starch to liquid in terms of tb. per cup.

Procedure:

Have ready enough boiling water in a kettle. Disperse cornstarch in 2 tb. cold water in a saucepan. (Use a pan of suitable size. A utility bowl may be used and the flame of the stove regulated so that it covers the bottom and does not come out of the sides of the pan).

Add hot water, stirring the mixture to prevent lumping.

Heat quickly to boiling, stirring enough to prevent lumping. Boil until maximum thickening is reached. Continue boiling 30 seconds longer.

Pour into a cup and cool. Placing the cups in a bowl of ice will hasten cooling.

Unmold gels into saucers when all gels are done. Label properly.

Observe differences in consistency.

B. Repeat A use wheat flour instead of cornstarch. Flour has a tendency to become lumpy. Disperse in cold water and combine it with hot water to avoid lumping.

How may you use this lesson for figuring out recipes for sauces, gravies & puddings?

How do gels from starch compare with those of flour?

What amount of cornstarch gives a firm gel? of flour?

Why is it necessary to disperse the starch in cold water before adding hot water?

What are the other ways of combining starch and boiling water?

If the starch mixture is not held at boiling point for sometime what effect does this have on flavor?

What are the desirable qualities of products thickened with starches?

C. Repeat A - B (optional)

Prepare three gels using the following amounts of sugar:

2 tb. 3 tb. and 4tb. with 3 tb. cornstarch and 1 c water.

Note difference in consistency. How does sugar influence the thickening power of starch?

How will you apply this observation in making sweet sauces like lumpia sauce?

Group 2 & 5:

MAJA BLANCA

Extract coco cream and cook in a pan to obtain coconut oil and "latik". Cook carefully to prevent the latik from burning. Have the latik light brown and not burnt. (See method of extracting cocomilk in Bico recipe).

Use the oil to grease the plate for the maja and the latik for garnishing.

Extract coconut milk using enough warm water to get 2 cups milk.

Recipe:
8 tb. cornstarch
1/2 c. sugar
2 c. coconut milk

Blend thoroughly cornstarch and sugar in a quart bowl.
Add 1/4 c. cold water
Boil coconut milk in a 2 qt. saucepan
Add cornstarch-sugar mixture, stir while adding to prevent lumping.

Cook to boiling, stirring the mixture all the time. Hold at boiling point for 3 to 5 minutes until a cooked flavor is developed.

Pour into two oiled soup dishes. Cool completely. Cut in pie-shaped or diamond shaped pieces. Garnish each serving with latik.

Palabok: Cook 1 c defatted grated coconut (sapal) with 1/3 c sugar.

The coconut should be cooked crisp. Serve with maja. If another thickening material is used, would you use the same amount to obtain the desired consistency?

Groups 3 & 6: Preparing smooth, cooked sauce..

Pancit Luglog

Ingredients	Weight	Measure	Directions
Eggs		2	Hard cook
Bijon	250 gms.	3 c, after soaking	Blanch in boiling water when ready to use.

Pancit Luglog (continuation)

Ingredients	Weight	Measure	Directions
Fat		3 tb.	
Garlic, 2 heads		1/4 c	Pound
Onion, 1 med.		1/2 c	Slice
Tokua, 2 pieces		3/4 c	Slice 1/4"thick, 1/2" square.
Pork#	250 gms.	3/4 c	Boil and slice 1/8" thick, 1 1/4" square
Shrimps	250 gms.	1/2 c	Boil, peel and slice lengthwise
Tinapa, 3 med.		1/3 c to 1/2 c	Flake & grind
Crackling, 1 large piece		1/2 c	Pound finely
Patis		1 tb. or more as needed.	
Green Onion		1/2 c	Cut finely

Saute' garlic. Remove 1/2 after browning and use this for garnishing.

Saute' the remaining garlic with onion, tokua, pork and shrimp. Season with patis.

Set aside.

Have the tinapa, crackling, green onion, and sliced cooked egg in separate containers ready for serving the pancit.

Prepare Palabok:

Cooking oil	3 tb. or 1 bastingspoonful	
Annatto	1 tb.	
Bagoong(shrimp)	2 or 4 tb.)	Boil in water and strain
Water	2 c)	
Flour	6 tb. or 1/3 c	Disperse in cool annatto-colored oil.

Extract achuete color in fat by fractional means. (See vegetable lesson, p. 20).

Heat the fat carefully over low flame. Cool.

Separate lean from fat. Peel skin. Cut fat into uniform pieces and render lard. Slice skin 1/8" thick.

Heat strained bagoong extract to boiling and add carefully with stirring to flour-fat mixture. Cook until thick. Boil 1/2 min. longer.

Preparing the pancit for serving.

Place the freshly blanched bijon on a platter. Add 1 tb. patis. Pour some "palabok" into the bijon. Place the sauted mixture, tinapa, and pounded crackling.

Add more palabok.
Garnish with slices of egg and green onion(cut finely).

Note: Allow 2/3 c palabok per cup of blanched bijon. Note saltiness of bagoong and regulate amount of patis accordingly.

2nd Laboratory Period

Groups 1 & 4 - Steaming starchy product.

Cassava Suman:

Combine 3 c finely grated cassava
3/4 c finely grated coconut
1 c sugar

Prepare wilted banana leaves of this size: 9" x 6".

Place measured amounts of cassava mixture in two thicknesses of banana leaves. Roll leaves. Fold ends keeping the suman 6" long.
Tie suman in pairs.

Steam for 30 minutes. Count time when steam starts to form. Keep the steamer well supplied with water to prevent drying out. In the absence of cassava, prepare another suman, malagkit, corn, or mongo. Consult the teacher for a recipe.

Groups 2 & 5:

CUCHINTA

Combine in a 2 quart bowl

1/2 c rice meal# dough (galapong)
dispersed in 1/4 c water.

To prepare rice meal dough:
# Soak rice and grind twice in stone grinder. Drain off excess water by placing rice batter in a muslin bag. Most of the water should be removed so that a dry meal results. Use this dry meal in above recipe.

1/2 c brown sugar
Add 1 1/4 c boiling water gradually.
1/2 t. baking soda. Stir mixture.

Prepare a steamer. Line with small saucers especially made for cooking cuchinta. Pour the rice batter from a cup with a spout. (pyrex-measuring cup). Stir the mixture occasionally to distribute the rice meal. Use a bastingful for each saucer.

Steam for 15 minutes. Lift steamer rack from the pan of boiling water, Remove saucers. Cool mold first if necessary on wet towel. To remove from molds lift with a knife.

Finish cooking the remaining mixture. Serve cuchinta with grated coconut.

Why is it necessary to cool cuchinta before unmolding? For most pudding products -- why will cooling improve their serving quality?

Groups 3 & 6

Crab - Vegetable Omelet with Sweet Sour Sauce

Ingredients	Weight	Measure	Directions
Crab, female		2	Cook, shell and flake
Patola, medium 7 to 8" long			Cut crosswise 1/2" thick. If large, cut lengthwise.
Cabbage	200 gms.		Cut 1 1/2" square
Onion, medium	1/2 c		Slice 1/4" thick
Garlic	1 tb.		Pounded
Toyo	1 t.		
Fat	4 tb.		
Duck's eggs	3		Beat stiffly for omelet; add salt.
Salt	1 t.		

Saute' garlic, onion, cabbage, patola and crab. Season with toyo and salt (if necessary).
Drain sautéd mixture before making the omelets.
Use this mixture as filling for the omelet. Prepare 3 omelets. Serve with sweet-sour sauce.

Blend: 1 1/2 tb. cornstarch
4 tb. sugar thoroughly in a cup

Combine and boil in a saucepan:

1 c water
1/4 c vinegar
1/2 tb. toyo
1/2 t. salt

Add one half of this mixture gradually to the cornstarch in the cup. Stir while adding. Return the mixture to the saucepan. Boil 1/2 minute.

When acid is used what will be the effect of long cooking of the starch mixture on thickness?

What change takes place in the starch?

What other treatment of the starch results in a change in thickness of cooked gels?

Write down a recipe of lemon pie and give the source.
When is the acid added to lessen its effect on the viscosity of the mixture?

EGG COOKERY

Egg as a thickening agent

Ist Laboratory Period:

I. Study egg quality (Demonstration and discussion. The teacher may weigh and measure the eggs in the following exercises)

A. Indirect method of testing egg quality.

1. Note differences in
   a. size of eggs
   b. weight of a dozen each of small, medium and large eggs.

See tabulation in this lesson to record results.
In most recipes what size of egg should you use?

Is there a difference in the quality of a product if a different size of egg is used?

2. Candling eggs - Describe the candling test.

What may be seen of the interior quality of the egg by candling?

What is a fresh egg by the candling test?

B. Direct method

1. Break egg int a saucer.

Note the shape and size of the yolk; the thickness of the white. Can you see the two layers of egg white?

Is the germ spot visible? Sketch a fresh and a less fresh egg as seen from the side of a flat plate.

How fresh is the egg that you opened? Measure in separate cups and count the number of small, medium, and large eggs per cup.

Note: These eggs may be fried, poached, or made into custard after this test.

2. Cooking performance: By frying, poaching, hard-cooking shell eggs, using eggs for custards and as a leavening agent in cakes, differences in the quality of the egg may be tested.

How do stale eggs fry? hard cook? thicken? leaven?

II. Demonstrate the cooking of custard (leche flan)

CUSTARD:

Ingredients	Measure	Directions
Sugar	1 tb.	Caramelize in a ring mold
Evaporated milk	1 (14 oz.) can	Scald in double boiler
Eggs, 4 medium	3/4 c.	Beat in a bowl until whites and yolk are blended only.
Sugar	1 c	Add to eggs
Lemon rind (dayap)	1 t.	

Combine eggs, sugar, and scalded milk in a bowl. Add rind. Strain thru sinamay. Pour into caramel-lined mold.

To cook in a pressure cooker place 1/2 c water in a pressure saucepan with a rack. Place custard. Cook at 15 lbs. pressure for 5 minutes. (for a ring mold). Cool pressure cooker in a dishpan of cold water. When pressure is released open cooker. Test the cooked stage of the custard by inserting a knife at the center of the thickest part. If knife comes out clean the custard is done. (A custard when almost done expands slightly. Note and check this with knife test).

Cool custard over a pan of water. In the laboratory cool further by surrounding pan with crushed ice. Unmold when completely cooled. Why?

In the absence of a pressure cooker place the custard mold in a water bath with a rack. Bring the water to simmering temperature. Keep the water simmering throughout the cooking period. If a thermometer is used the water should be 90-95°C. Keep the pan covered. For a ring mold cook 20 minutes counting time when the water is simmering or at 90-95°C.

If a different recipe is used will the custard cook for the same period?

When another mold is used why will the cooking time be different?

What are the qualities of a good custard? Are there other ways of cooking custards? Describe.

III. COOKING SHELL EGGS:

a. Cover eggs in a saucepan completely with cold water.
Heat to boiling point.
Cover saucepan. Remove pan from the stove. Keep the eggs 2 to 4 minutes for soft boiled eggs.

23 to 25 minutes for hard-cooked eggs.
(Count time right after removing from the stove)
Cool eggs in a bowl of cold water at once.

b. Boil a pint of water in a 2-quart saucepan. Use enough water to cover the eggs during cooking.
With a spoon, lower eggs into the water to prevent cracking the shell.
Regulate the heat to keep the water simmering(90-95°C.)

3 to 5 minutes for soft-cooked eggs.
18 to 20 minutes for hard-cooked eggs.

What are desirable qualities of hard-cooked eggs?
How is the discoloration on the surface of the yolk formed?
What is this discoloration?

Cut hard-cooked egg in half lengthwise, and note the position of the yolk and the size of the air sac. Sketch a fresh egg and a less fresh one cooked in the laboratory.

2nd Laboratory Period:

Group 1 & 4

Bread pudding

2 c. milk
1 tb. butter
1 1/2 c. cubed bread, 1" cubes (stale but not dry and hard, use 2 pieces of pan de sal)
1/2 t. lemon rind
2 eggs
3/4 c. sugar

Scald the milk. Add the butter. Soak the bread completely
in the milk.
In a bowl beat eggs slightly. Add sugar and lemon rind.
Combine egg mixture and softened bread.
Pour into a caramel-lined mold.
Bake at 375°F. for
Set the mold in a pan of hot water.
one hour or until done or cook in a water bath like the custard for 25-30 min. at simmering temperature. See test for cooked stage of custard. Cool pudding completely before removing from mold.

Group 2 & 5

FRUITS SALAD WITH CUSTARD DRESSING

INGREDIENTS	MEASURE	DIRECTIONS
Pineapple, canned 4 slices	2 c	Cut 1/2" wide around rin
Avocado or chico	1 c	Cut 1/2" cube
Bananas (lacatan)	4 medium	Cut lengthwise then crosswise 1/2"
Apples, red	3 medium	Do not pare. Wash and cut 1/2" cubes; Remove cores.
Pineapple juice	1 c.	
Sugar	2 tb.	
Lemon juice(calamansi or dayap)	2 tb.	

Cut bananas and apples first and allow to stand in pineapple juice while preparing the other ingredients. Why?

Drain pineapple juice and combine apples and bananas with the rest of the ingredients. Blend carefully to prevent mashing. Add avocado last. Chill completely. Serve the following custard sauce: (Top chilled fruits with this sauce and serve the rest separately to prevent a watery salad.)

Scald 1 1/2 c milk in a 2 qt. saucepan
Add 1 1/2 tb. cornstarch dispersed in cold water
1 tb. cold water

Cook over medium heat stirring constantly to prevent scorching until mixture thickens.
In a quart bowl
Beat 2 eggs slightly to blend yolks and whites
Add 1/4 c sugar.
Pour thickened milk gradually into egg, stirring constantly. Return mixture to saucepan and cook over hot not boiling water. Stir constantly until thick coat of custard clings to a spoon. Cool mixture quickly. Add 1/4 t. dayap rind. Chill.

Why is starch cooked before adding the eggs? Give cooking temperature of each.

Group 3 & 6

MACARONI WITH TOMATO SAUCE

Ingredients	Measure	Directions
Macaroni	1 (8-oz.) package	Break into 1 1/2" pieces and cook in 8 c. boiling water and 2 t. salt in a 4 qt. saucepan for 30 min.#
Tomato sauce	1 can (8 oz.)	Turn into pt. cup and add enough water to measure 2 c.

# After adding macaroni allow water to boil, then finish cooking with the lid of pan off using low heat. Why?

If covered what happens? Turn into a colander and drain. Cool under running water if the macaroni is to be used for a salad or if the sauce is not ready.

MACARONI WITH TOMATO SAUCE (continuation)

INGREDIENTS	MEASURE	DIRECTIONS
Cornstarch	2 tb.	Disperse in 2 tb.water
Grated cheese	1/2 c.	Combine 1/2 with the mixture and use the rest for garnishing.
Eggs	4	Hard cook and cut into eight.
Ham	1/2 c.	Slice thinly and cut 1 inch square.
Fat	1/4 c.	
Onion, 1 med.	1/2 c.	Slice

Saute´ onion in fat. Add ham. Set ham aside. Add tomato sauce with water to sauted onion. When boiling add cornstarch dispersed in water. Cook until starch has a cooked taste. Season to taste with salt. Add 1/2 of the grated cheese.

Save about 1/2 c. of this sauce, 2 tb. sliced ham, 1/2 of the sliced eggs and the rest of the cheese as topping for the dish.

Place the cooked macaroni on a serving dish and combine with one half of sauted mixture. Garnish top with more sauce, ham, eggs and grated cheese. Serve hot. If pyrex dish is used, this may be warmed in the oven at 350°F before serving.

Give 5 variations of the pudding recipes.

(After question in I)

Summarize the evaluation of eggs in the following tabulation

	Average per egg*	A doz.	Average per egg	Number per can	Comments
	Grams	Grams	Grams		
small	35				
medium	48				
large	58				

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* This is the average found in previous classes. Each class may report actual weights taken from eggs brought to the laboratory.
Eggs from native hens (Batangas eggs) are usually small. Use them for this lesson. Leghorn eggs usually are medium to large.

EGG COOKERY

Egg as a Leavening Agent

Ist Laboratory Period:

A. Demonstrate the mixing of sponge cake:

Recipe: Prepare a 3-quart and 4-quart mixing bowls.
1 tubed pan (8 1/2" in diameter by 3 1/2" tall)
1 batter beater
1 rotary egg beater
1 rubber scraper
Measuring cup and spoons
Squares of paper for sugar and flour.

Ingredients:

Eggs, 5 or 6	1 c
Sugar	1 c
Sifted cake flour	1 c.
Salt	1/4 t.
Cream of tartar	1/2 t.
Water	2 tb.
Vanilla	1/2 t.

Set the oven at 350°F.

Separate yolks from whites of egg. Place yolks in a 4-qt. bowl, whites in a 3-qt. bowl.

Using a rotary egg beater beat eggwhites until foamy. Add cream of tartar. Continue beating until soft peaks form or until eggwhites flow slowly when the bowl is tilted on its sides. Add 1/3 of the sugar by tablespoon beating after each addition. Set aside.

Add salt, vanilla, and water to egg yolks. Beat until thick and lemon-colored using the same beater used for the whites. Add the rest of the sugar by tablespoons, beating well after each addition. Continue beating until mixture is very thick.

Place flour in a sifter. Using a batter beater fold in flour into well beaten yolks, sifting a thin film of flour at a time. As soon as flour disappears sift another film of flour and continue folding into egg yolk mixture. Fold in beaten eggwhites alternately with flour. Add beaten eggwhites in five portions blending them into the yolks carefully but thoroughly. Incomplete blending of the eggwhites may leave large holes in the baked cake.

Precaution: Do not delay the blending of the ingredients for this cake. Use gentle folding motion. Otherwise, the air which leavens the product is lost and a small volume of cake results. Too much mixing also favors the development of the gluten and a tough cake results.

Turn the mixture into an ungreased tubed pan and bake right away. Baking time: 30 minutes.

A cake is done when the crust is a golden brown and it springs back when lightly touched with finger tip.

After baking, cool the cake on a rack with the pan up side down. Cool the cake completely before removing it from the pan.

B. Evaluating the qualities of egg white foams.

In a 2-qt. bowl beat 2 fresh egg whites vigorously with a rotary egg beater for different lengths of time - 10 seconds, 20 seconds, 30 seconds, and 1 minute as follows:

Beat 10 seconds, weigh 10 gms. into a custard cup, set aside for observation.

Beat remaining egg in the bowl 10 seconds longer, weigh out 10 gms. into another cup.

Beat remaining whites 10 seconds longer, and proceed as before.

Beat the last portion 30 seconds to give a total of 1 minute beating.

Compare the volume, texture, moistness and liquid egg at the bottom of these 4 cups.

How is stiffness of the foam described in recipes?

Show the class the appearance of the foam at different stages.

It is beaten to soft peaks when the foam flows slowly on the side of a slightly tilted bowl.

It is beaten stiff when the bowl of foam is inverted and the foam does not fall.

If a rubber scraper is passed thru the foam a stiffly beaten egg white leaves a track behind; one that is beaten to soft peaks follows the rubber scraper but is not watery at the bottom.

How is stability of the foam measured?

Do big volumes of beaten eggs give the best sponge cakes? Why?

For what cake is a stiffly beaten egg white recommended?

Describe the qualities of the egg foams in the following tabulation:

Foams	Volume	Texture	Stiffness	Stability after standing
10 seconds				
20 seconds				
30 seconds				
1 minute				

What are the two important problems in the mixing of sponge cakes by any method?

Why is it important to beat the sugar thoroughly into the beaten eggs?

Why is flour added in a thin film at a time?

What is the reason for using an ungreased pan for baking sponge cake?

Why is the cake baked right after mixing?

Why is the cake cooled in an inverted pan?

2nd Laboratory Period:

Each group prepares 1/5 of the recipe.

Use a 2-qt. bowl for mixing, and a small loaf pan, 2 1/2 x 2 1/2 x 5 inches, for baking. Baking time: 20 to 25 minutes.

1/5 of the recipe:

Egg	1 med.	
Sugar	1/5 c.	40 gms.
Flour	1/5 c.	20 gms.
Salt	1/16 t.	

Cream of tartar-1/16 t.

Water - 2 t.
Vanilla- 1/8 t.

Compare your product with others prepared in the class.

Compare the cakes for volume, tenderness, and texture.

Account for differences in volume, tenderness and texture.

Look up two other methods of mixing sponge cake. Give the source of your recipe.

Gluten in Flour
Yeast Bread

Ist Laboratory Period: All groups will do these lessons.

1. Study gluten in wheat flour.

a. Gluten from all-purpose or bread flour.

Sift and measure 1/2 c. (56 gms.) flour in flour in a quart bowl.

Add 2 tb. water or enough to make a stiff dough. Record the amount of water used. Stir thoroughly. Let stand 5 minutes. Knead until the dough is elastic and pliable. Note and describe how the dough feels early in the kneading process. Compare it with the elastic and pliable dough as kneading is completed.

Kneading may take 80 to 100 strokes.

To wash out starch from the gluten:

In a qt. bowl knead dough with a cup of water to wash out the starch. Strain this water into a large bowl. Repeat this process until the water is clear, taking care not to lose the gluten to the wash water or a very small amount of gluten will remain. (Washing may take 7 to 10 changes of water. Save all the wash water, allow the starch to settle, and throw away clear water. Use the starch for sauces or puddings).

(a) Weigh the gluten ball. ________ gms. Bake all balls prepared by the class at 425°F for 15 minutes, then at 350°F for 15 minutes.

Compare with the gluten ball from cake flour and from those prepared by other groups. Note color, elasticity, and volume after baking.

(b) Repeat (a) using 56 gms. cake flour. Measure ____c. Start adding 1 tb. water, then add more water gradually by teaspoons until the dough is formed. Keep a record of the amount of water added.

Wash out starch carefully by placing dough in a thin muslin cloth (muslin sugar bag may be used) and kneading in a bowl of water as in the preceding.

Compare the flours used in (a) and (b) for color, texture, measure per given weight (56 gms.), amount of water absorbed, amount and elasticity of gluten, and volume of the baked product. Tabulate results.

Kind of flour	Meas. of 56 gms.	Water absorbed to make a stiff dough	Color	Texture	Wt. of gluten balls (gms.)	Volume of baked gluten
a. All-purpose (Gold Medal)	c.	tb.				
b. Cake flour (Swan's Down)	c.	tb.				

What gas caused the gluten balls to expand?

The expansion of the gluten during baking shows its elasticity, What property useful in bread making is demonstrated by this?

Which flour will you recommend for breadmaking? Why?

Identify 5 brands of flour in the market.

c. Effect of added ingredients like more water, milk, fat, eggs, sugar, baking powder on the elasticity of gluten.

If time will permit each group may prepare dough with one of these ingredients. Results of the different groups may be observed by the whole class.

How does each of these ingredients affect the elasticity of gluten?

More water -

Milk -

Fat-

Egg-

Sugar-

Baking powder-

Would you use a large amount of these ingredients if an elastic dough is desired? Why?

2. Prepare the dough for standard yeast rolls.

1. In a 3-qt. bowl make a slurry of

1 t. dry active yeast
1 tb. cold water

Set aside.

2. Scald 1 c milk
Add 2 tb. shortening
1 tb. sugar
1 t. salt

3. Cool milk. When lukewarm, i.e, you can dip your finger for one minute without being annoyed by the heat or a temperature of 90F,* add to yeast slurry.

4. Stir in 2 3/4 c all-purpose flour gradually. Beat 100 strokes. Allow to stand 5 minutes.

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* Ask the groups to check this temperature in plain water. Heat water to 90°F and dip finger to note how warm this temperature feels.

5. Turn dough into a lightly floured board and start kneading. If the dough gets sticky an additional 1/4 c flour may be used for kneading. Do **not** add too much flour or the dough will become very stiff.

   To knead the dough use the heel of the hand (do not stick fingers into the dough). Turn the dough around as you knead. The dough becomes pliable and satiny after kneading and blisters will be seen beneath the surface.

6. Set aside in a 3-qt. bowl, grease the surface generously and cover bowl with paper. Fasten with a rubber band. Set aside to ferment.

Why is it necessary to grease the dough when setting the dough aside to ferment?

(In the class the shaping and baking may be done during the next period) It is necessary to store the dough in the refrigerator. Why?

If stored at room temperature how fast will the fermentation proceed? What product will result?

Note to the Instructor:

Test yeast for activity:

For the yeast roll it is a good idea to test before having the class mix their rolls.

Testing the yeast:

Using 1/2 of the recipe prepare a mixture. Allow the dough to stand until double in bulk (Use a bowl of suitable size for the amount of mixture to enable you to note doubling of the volume of the dough). If yeast is active the dough doubles in 1 1/2 to 2 hours.

If a yeast of poor activity is the only one available or if a limited amount of yeast can be had, use the sponge method of mixing. (that is, prepare a drop batter from the mixture by adding to the liquid only 2/3 of the flour in the recipe.

2nd Laboratory Period:

(Start the laboratory on the lecture hour to allow the groups to shape the rolls. After shaping meet the class for the lecture while allowing the rolls to ferment until ready to bake)

For all groups to do before shaping the dough:

If the doughs were stored in the refrigerator turn them out at least one hour before shaping.

Turn out the dough on lightly floured board (use 1 tb. flour). Knead 20 strokes.

Flatten and form rolls as suggested for each group.

Group 1 & 4 - Cinnamon rolls

Flatten dough into a rectangular piece 1/2" thick. Spread over generously with softened butter.
Sprinkle all over with

1/4 c brown sugar
2 t. cinnamon
1/4 c raisins

Roll like jelly roll. Cut one inch wide. Place slices of rolled dough in 2" deep buttered baking pan (8" diameter) Be sure to keep the sides of the cut dough straight and the pieces arranged close to each other. In this way the pieces rise rather than spread out during the fermentation period prior to baking (or during proofing).
Let rise until double its original volume. Bake at 375°F for 20-25 minutes.
(This group may shape the dough into ensaymada if desired)

Group 2 & 5 - Butter Horns

Divide the dough into two.
Butter the bottom of an inverted 8" layer cake pan.
Flatten each piece on this pan. Cut 6 pie-shaped pieces.
Flatten each of these pieces 1/8" thick keeping the triangular shape.
Spread generously with softened butter. Beginning at rounded edge, roll up to point.
Place two inches apart on baking sheet, with point underneath to keep it from unrolling.
Set to rise in a warm place (80°-85°F) until light and double in volume-about 1 hour.
Bake the rolls in a hot oven (400°F) until brown-about 15 minutes.

Group 3 & 6 - Twists

Butter the bottom of an inverted rectangular baking pan (9" x 12")

Flatten dough to the edges of this pan. Spread over generously with softened butter.

Cut through center lengthwise, then each half crosswise into 8" pieces.

Roll each piece on slightly greased board with palms of hand to make smooth rope 9 to 10" long.

Knot each length loosely.

Place two inches apart on greased baking sheet.

Bake like butter horns.

Kind of flour mixture	Flour (cup)	Liquid (cup)	Uses
Batters			
1. Pour			
2. Drop			
Doughs			
1. Soft			
2. Stiff			

Questions:

1. Discuss: Yeast in bread making. Include the following points-its nature, conditions, necessary for their growth, how its growth affects the dough, desirable and undesirable products of fermentation and how they affect the baked product.

2. What is meant by the gas-retaining property of the flour? its gas-producing property?

3. If large amounts of butter and sugar are desired in yeast rolls like ensaymada how may you add them without interfering with gluten development and fermentation of the dough?

4. Suggest 5 variations of the yeast roll recipe.

Flour Mixtures: Batters

Shortened Cakes and Chemical Leavening Agents

Ist Laboratory Period:

Demonstrate two methods of mixing cakes.

A. Conventional Method

Pound Cake

	Measure
1 lb. butter	2 c
1 lb. sugar	2 c
1 lb. eggs	10 medium
1 lb. flour, cake	4 c sifted
1 tb. orange rind or flavoring desired	

(Use 1/2 of this recipe for the demonstration;
1 lb.= 454 gms).

Line the bottom of a square pan, 8" x 8", with wax paper.

Heat the oven to 325°F.

In a 4-qt. bowl cream the butter. Add the sugar gradually by heaping spoonfuls and continue beating until fluffy.

Separate yolks from whites. Beat yolks in a qt. bowl until thick and light colored. Beat egg whites in 3-qt. bowl to soft peaks.

Add beaten yolks and orange rind to creamed butter and beat thoroughly.

Add beaten egg whites and blend.

Add flour in three portions. Blend, then beat vigorously, after each addition. Total beating after flour is added should be 300 strokes.

Pour into lined pan and bake at 325°F for 1 hour.

Cool on a rack 10 minutes and turn out of the pan.

Variation: Fruits or nuts may be added to this recipe.

B. Quick method or one-bowl method:

2 1/3 c sifted all-purpose flour
1 1/2 c sugar
1 t. salt
2 1/2 t. double acting baking powder
1/2 c shortening (hydrogenated vegetable or blended shortening).
2 eggs, unbeaten
2/3 c milk (measure 1 c, use 1/3 c later in the mixing)
1 t. vanilla

Prepare two 8 inch layer cake pans with paper lining at the bottom.

Heat oven to 375°F.

Sift flour, sugar, salt, and baking powder into a 4-qt. bowl. Add shortening, eggs, 2/3 c milk, and vanilla.

Blend ingredients using 15 strokes. Beat vigorously for 300 strokes by hand or 2 minutes at low speed in an electric mixer.

Add remaining 1/3 c milk. Blend using 15 strokes. Beat vigorously 150 strokes by hand or 1 minute by mixer.

Scrape bowl and spoon often. Count actual beating strokes or mixing time only.

Turn mixture into pans.

Bake at 375°F for 20 to 25 minutes or until done.

Cool pans on rack for 10 minutes.

Turn out cakes on rack, remove paper.

(In this laboratory period the class should be shown the appearance of the mixture at different stages-after butter and sugar are thoroughly creamed, after vigorously mixing the flour, etc. It should be noted that when a cake recipe says beat, the mixture must be beaten hard. The importance of accurate baking temperature and time and the proper choice of size of pan for the quantity of the mixture should also be discussed).

2nd Laboratory Period:

Groups 1 & 4

DELICATE BUTTER CAKE

Grease bottom of a 12-cup muffin pan.

Prepare
1/3 c butter
1 1/4 c sugar
2/3 c milk
2 eggs, separated
1/2 t. vanilla

Combine and sift together
(2 c. sifted cake flour
(1/4 t. salt
(2 t. baking powder

In a 4-qt. bowl, cream butter with a wooden spoon.

Add sugar gradually by tablespoon and beat until fluffy.

Stir in egg yolks and vanilla. Mix thoroughly. Divide the flour into 3 and the milk into 2.

Add 1/3 of the flour and stir 50 strokes.

Add 1/2 of the milk and stir 25 additional strokes.

Add second third of flour and stir 50 strokes.

Add remaining milk and stir 25 strokes.

Add remaining flour and stir 50 strokes.

Fold in beaten eggwhites using 25 strokes. Total mixing strokes will be 225.

Turn into pan filling each cup 2/3 full. Bake at 375°F 20 to 30 minutes. Cool cake in pan 10 minutes. Turn out on rack and cool completely if cake is to be frosted.

Groups 2 & 5

BANANA CAKE

(Using baking soda as a leavening agent).

Prepare:

1/2 c butter
1 1/2 c sugar
1 c banana (4 med.) pulp, mashed finely.
1 t. vanilla
2 eggs, separated
1/2 c milk

Combine and Sift:

2 c sifted cake flour
1/2 t. baking soda
1/2 t. salt

Line the bottom of an 8" x 8" pan with paper or use muffin pan.
Heat oven to 350°F.

Follow the method of mixing used in the Delicate Butter Cake. Add the banana pulp with the flour.

Bake for 30 to 35 minutes.

Cool like other shortened cake in this lesson.

Groups 3 & 6

CHOCOLATE CAKE

Prepare

2/3 c butter or margarine
1 1/2 c sugar
2 eggs separated
1 t. vanilla
2/3 c milk

Combine and sift:

2 c sifted cake flour
1/3 c sifted cocoa
1/2 t. baking soda
1/2 t. baking powder
1/4 t. salt

1/2 t. baking powder
1/4 t. salt

Line the bottom of two 8" layer cake pans with wax paper.

Heat the oven to 350°F. Mix in a 4-qt. bowl.
See delicate butter cake for conventional method of mixing.

Bake in 2 layer cake pans filling them 2/3 full.

QUESTIONS:

What are the types of baking powder? What type is the brand which was used in the laboratory?

How do baking powder and baking soda compare in leavening capacity?

What is the leavening capacity of one well beaten egg in terms of teaspoons of baking powder?

How does the kind of baking powder affect

a. the amount of baking powder per cup of flour in a recipe.

b. loss of CO_2 in batters and doughs.

c. length of mixing.

d. baking temperature

Why will a cake with excess sugar fall during the baking?

If molasses or honey is used in place of sugar in a recipe what leavening agent will be preferable to use, baking soda or baking powder? Why?

Flour Mixtures
Biscuits and Pies

Ist Laboratory Period:

Each group may prepare a recipe of baking powder biscuit.

(The instructor may demonstrate the preparation of this before the groups prepare their own recipe).

BAKING POWDER BISCUIT

Have ready a baking sheet, rolling pin, a 2 qt. bowl, 2 knives, a biscuit cutter or a sharp knife, a sifter, an embroidery hoop or 2 strips of wood, 1" thick.

Into a square of paper sift together

2 c sifted all-purpose flour
1/2 t. salt
3 t. S.A.S.- phosphate baking powder
or 4 t. tartrate baking powder

Sift again and place in a 2 qt. bowl.

Measure:

1/3 c. fat
2/3 c. milk

Heat the oven to 425°F

Using two knives,

Cut the fat into the flour until the fat is broken into small particles. Blend the flour and fat thoroughly in this manner.

Add all the milk and stir vigorously with a fork for about 20 strokes.

Turn the dough onto a lightly floured board and knead it gently for 10 or 15 strokes. (This may be demonstrated as described below)

To knead: Flatten the dough with the heel of the hand and fold over into two and then into two again to form a ball. Rotate the dough a quarter turn and repeat the flattening and folding over 4 times.

To shape:

Place the dough between two strips of wood 1 inch thick so that the ends of the rolling pin rest on the wood. Roll. Or place dough inside an embroidery hoop on a board. The dough when rolled will have the thickness of the hoop or the wood.

Cut the dough with a cutter or cut it into square or diamond pieces with a knife. The pieces may be 1 1/2 inches square.

Place biscuits on ungreased baking sheet.

Bake at 425°F for 12 to 15 minutes.

Serve hot with butter and jam.

What kind of a dough is baking powder biscuit?

What is the leavening agent in this product?

What are the kinds of baking powders?

What brand of baking powder is available in your locality? What type is it?

Of what importance is the kind of baking powder in the mixing and baking of flour mixtures?

May other kinds of flour be used for this recipe? How will the kind of flour affect the mixing of the product?

What method of mixing is used for baking powder biscuits and pastries?

(To the teacher: Give the class 20 minutes to prepare their biscuits. Ask a student to check the oven temperature and the baked stage of the biscuits according to the baking period in the recipe. In this period the teacher may also demonstrate the mixing and rolling of the pie crust. If time will allow all groups which need bottom crusts for their pies in the next lesson may prepare these. The rolled dough fitted into the pie pans may be stacked provided a sheet of waxpaper is placed between pans. Store in the refrigerator. In the absence of a refrigerator postpone the preparation for the day of the lesson).

Basic recipe for pie crust

1 c sifted all-purpose flour
1/2 t. salt
1/3 c fat
3 1/2 to 4 tb. water

Sift flour and salt into a 2-qt. bowl.

Cut fat into flour with two knives until fat-flour particles are the size of corn.

Sprinkle the water by tablespoons over the flour mixture. Stir with a fork until the flour is moistened but not sticky. Each time water is blended, bring a new portion of flour on the surface of the bowl.

After all the water is added, stir the mixture lightly with a fork to gather the dough into a ball. Some flour will remain unblended but on rolling, it will blend to form a smooth dough.

Roll the dough between two sheets of waxpapers (12" wide) on a board. If an outline of the piepan is marked heavily on the board with a crayon it will serve as a guide for the use of the rolled dough.

Roll the dough from the center outwards doing so several times until the dough is of uniform thickness (1/8" inch) and of a size to fit the pan. Allow for the depth of the pie pan. For the regular 8" pan the dough may be 1" wider around.

Lift the wax paper and turn over the whole thing (dough and waxpaper) over once or twice during the process of rolling.

Lift top sheet of waxpaper and place rolled dough in pie pan. Lift other sheet of waxpaper carefully. Set the dough on the pan snugly, being careful not to stretch it.

If a pie shell or bottom crust is being prepared, fold edge of dough under and flute. Prick all over with a fork before baking.

Is a two crust pie is being made do not prick dough. Add filling.

Before placing top crust cut slits for steam vents. Cover pie and press edges folding under slight excess of over-hanging dough on the rim. Flute with thumb and index finger.

2nd Laboratory Period:

Groups 1 & 4 - Chicken Pie

Cut a kilo dressed chicken into serving pieces as for fritada (to be shown by instructor).

Cook with 1 1/2 cups water and 1 1/2 t salt at simmering temperature in a covered pan until tender. Replace water lost during cooking if necessary.

Prepare the following ingredients while tenderizing the chicken:

1 med. onion, sliced
1 can tomato sauce (8 oz.)
1 med. carrot (80 gms.) parboil, pare and cut 1/2" cube.
1 med. potato pared and cut 1/2" cube
4 pieces Vienna sausage, cut 1/2" long crosswise
1/2 c canned peas
3 tb. flour
1/4 c fat
1 1/2 c chicken stock or other liquid

Combine fat and flour in a 4-qt. saucepan. Heat, stirring to prevent lumping. Add onion and saute'. Add tomato sauce, tender chicken, carrots, potato and chicken stock. Allow to simmer.

Add sausage and peas. Use liquid from these canned products if desired for additional liquid.

Season with salt and pepper. (Place a small piece of bay leaf if desired.)

Place cocked mixture in a pyrex pie plate.

Place top crust only. Brush surface with slightly beaten egg or milk.

Bake at 425°F on upper rack in the oven for 10 to 15 minutes.

Groups 2 & 5 - Pineapple Pie

Prepare double the recipe of pie crust or pastry for a two crust pie. See general directions for mixing and rolling. Be sure to cut slits on top crust for steam vents.

Filling:

2 1/2 c hot crushed pineapple (No. 2 can)
1/2 c fine cracker crumb or
1/3 c flour
1/2 c sugar
2 tb. butter
1 tb. lemon juice

Combine all ingredients in a 2-qt. bowl. Fill pastry-lined pie pan.

Cover with top crust. Brush surface with milk or a tb. egg white with 1 tb. sugar and 1/2 t. cinnamon.

Bake 30 to 40 minutes at 400°F.

Cool on a rack before serving.

Groups 3 & 6 - Banana Cream Pie

Line an 8" pie pan with crust. Flute rim and prick crust all over. Place another pie pan and bake at 425°F for 10 to 12 minutes. Remove upper pan after 5 minutes.

Fill this baked pie shell with the following banana cream filling.

Scald 1 c milk in double boiler
Beat 2 yolks, slightly in a qt. bowl
Add and blend to this

1/3 c	sugar
1/4 c	flour
1/8 t	salt

Pour scalded milk gradually, stirring constantly. Return to the double boiler, cook 15 minutes stirring constantly until mixture thickens.

Add 1/4 c evaporated milk
1 tb. lemon juice
1 large banana, peeled, scraped and cut 1/4 inch crosswise.

Chill thoroughly and turn into baked pie shell.

Cover with meringue by beating 3 egg whites until stiff but not dry.

Adding 1/4 c sugar
1/2 t. lemon juice

Beat until sugar is well blended
Spread evenly on pie and pile at center.
Bake in a slow oven 300°F for 15 minutes.
Cool pie before serving.

Questions:

1. To what kind of flour mixture does pastry belong?

2. Is pastry leavened? If so, by what?

3. What are desirable qualities of a good pastry?

4. Why is the bottom crust pricked all over before baking?

5. Why is the top crust cut with slits before baking?

6. What is the function of the fat in pastry?

Fats in Food Preparation

Emulsions

Ist Laboratory Period

All groups may prepare 1/4 of a recipe of cream puff as an example of a flour mixture (a thin batter) which is an emulsion. A demonstration may precede the group recipes.

CREAM PUFF:	Whole Recipe	1/4 Recipe
Water	1 c	1/4 c
Butter	1/2 c	2 tb.
Flour (all-purpose)	1 c	1/4 c.
Egg (med.)	4	1

For 1/4 of the recipe, use a 1 or 2 qt. saucepan.

Heat the oven at 425°F.

Combine water and butter in a saucepan. Heat until butter melts.

Add all the flour and stir vigorously until the mixture leaves the sides of the pan and forms a ball.

Remove the pan from the stove.

Beat the egg (for one egg, use a soup plate and beat with a fork; for more eggs use a qt. bowl and an egg beater) and add to the flour mixture and beat thoroughly with a wooden spoon. The mixture should be so stiff that it hold its shape when spooned but should not be buttery as a result of over cooking.

Spoon out mixture onto a baking sheet to make three puffs.

Form a round mound, two inches in diameter, for each puff.

Bake at 425°F for 20 minutes. Reduce the temperature to 325°F after the product has puffed and bake another 20 minutes or until the puff is firm.

Cut a slit on one side of the top of the puff and fill with the following mixture.

Cream Filling

2/3 c sugar

1/2 c all-purpose flour

1/8 tsp. salt

2 c scalded milk

1 tsp. vanilla

2 eggs

Blend thoroughly sugar, flour, and salt in a 2-qt. bowl.

Add scalded milk. Return to a double boiler.

Cook 10 minutes stirring constantly until mixture thickens.

Beat egg slightly to blend yolks and whites only.

Add thickened mixture to eggs and stir.

Return to the double boiler and cook 3 minutes or until mixture coats a wooden spoon.

Cool and flavor.

Each group may prepare 1/2 of the cream filling recipe to fill 3 puffs.

QUESTIONS:

What is an emulsion?

Why is the cream puff paste an emulsion?

Why will cooking the mixture too long before adding the egg result in the separation of butter from the mixture?

How will you remedy such a product?

How does the baking procedure influence the volume of the cream puff? Why does cream puff sometimes collapse on removing from the oven?

2nd Laboratory Period:

Each group will prepare a recipe of mayonnaise. 3 groups may be asked to use local refined oil like Mayon and 3 groups may use other salad oil like Wesson brand. Have the class distinguish the mayonnaise from the two brands of oil.

MAYONNAISE DRESSING

1 egg yolk
1/2 t. salt
1 t. sugar
1/4 t. mustard
1/8 t. pepper
1 1/2 tb. cider vinegar or
lemon juice
1 c. salad oil

Combine all ingredients except the oil in a 1-qt. bowl. Beat thoroughly.

Add oil one tablespoon at a time beating well after each addition.

After all the oil is added beat one more minute or until mayonnaise is thick enough to hold its shape when spooned out.

To practice remaking a broken mayonnaise each group may divide the mayonnaise and break the emulsion of one half by stirring the product in the bowl over a pan of boiling water.

Remake the mayonnaise by stirring it little by little into any of the following:

a. A tablespoon of made mayonnaise
b. A tablespoon of egg white or egg yolk
c. A teaspoon of water or vinegar

Can you remake the mayonnaise by stirring the made mayonnaise, egg or liquid into the broken mayonnaise?

What causes emulsions to break during mixing? during storage?

How will you distinguish Mayon oil mayonnaise from Wesson oil mayonnaise?

What treatment is given to oil used for salad?

The mayonnaise will be used by the class for the following products.

Groups 1 & 4

SHRIMP - PINEAPPLE SALAD

Boil, peel and cut along the back 300 gms. shrimps (medium size)

Cut 4 slices canned pineapple 1/2" wide
Mince 2 tb. sweet pickles.
Combine above ingredients.
Pile on plate with lettuce (leaf or head) as bed.
When ready to serve add 3 to 4 tb. mayonnaise.

Sprinkle 1/2 tsp. paprika powder on top as a garnish or use one tablespoon finely chopped sweet red pepper and serve chilled. Serve with more mayonnaise.

Groups 2 & 5

CHICKEN - VEGETABLE SALAD

Cook, peel and cut into 5/8" cubes

700 gms. potatoes + 4 c
100 gms. beet + 1/3 c
100 gms. carrot + 1/2 c

Hard cook 1 egg
Chop or Grind

1 small onion
2 medium green pepper or 1 large
1/2 c sweet pickles

Remove bones from 1/2 cooked chicken; cut 1/2" long across the grain of the meat.

Measure first three vegetables and chieken separately to determine how much salt to use for seasoning.

Season with 1/8 to 1/4 teaspoon of salt per cup of these ingredients.

Marinate ingredients in French dressing or allow to stand in pickle liquid until ready to use. Before adding mayonnaise drain excess pickle juice to avoid a watery salad.

In a bowl combine chopped ingredients with chicken, carrots, and potatoes.

Add 1/3 to 1/2 c mayonnaise

Add beets last, blending carefully to prevent discoloring the whole salad. Chill

Serve on a bed of crisp lettuce. Top with mayonnaise and garnish with slices of hard-cooked egg.

Groups 3 & 6:

STEAMED FISH WITH THOUSAND ISLAND DRESSING

Clean 1 700 gms. white fleshy fish *
(Sole lapu-lapu or apahap, etc.)

Rub over with 1 t. salt and 1 tbsp. lemon juice.

1/2 c chopped onion (1 medium)

Line the rack of a steamer with banana beaf so arranged for easy lifting of the fish after cooking.

Steam fish for 30 minutes counting time when steam forms.

Allow more time if fish is very cold from refrigerator storage.

Cooked stage of fish may be tested by inserting a fork in the thickest part, turning it around and removing the meat to see if it is cooked. Another test is to note if the eyes of the fish have popped up.

Lift the fish together with the banana leaf and set it on a platter.

Tear the banana leaf and pull pieces from under the fish gradually to prevent breaking up the fish. (To be shown by instructor). Drain liquid from the platter.

Garnish fish with salad greens, mashed potatoes and serve with thousand Island Dressing. Place mashed potatoes around the fish and spread dressing on fish in diagonal strips one inch wide. Do not cover head and tail of fish.

MASHED POTATOES

Boil 2 medium potatoes. Peel and pass thru a strainer while hot.

Add 1 or 2 tb. butter
1 or 2 tb. evaporated milk
1/4 t. salt

Stir with a fork lightly to give fluffy mashed potato.

THOUSAND ISLAND DRESSING

1 c. mayonnaise
1 tb. of each of the following finely chopped ingredients:

Onion
Red pepper
Sweet pickles
Olives (if available)
Green pepper

Chop or grate finely 1 hard cooked egg.
Mix above ingredients and serve with fish.

FATS IN FRYING

1st Laboratory Period:

Groups 1 & 4

FRIED LUMPIA

	Wt.	Meas.	Directions
Mongo Sprouts	300 gms.	3 c.	
Potatoes, 2 med.	gms.	1 c.	Pare & grate coarsely
Pork	200 gms.	1/2 c.	Boil, separate skin, lean, and fat. Slice 1/8" thick. Render lard from fat.
Shrimps	150 gms.	1/2 c.	Blanch, peel, cut along back.
Tokua, 2 cakes		3/4 c.	Grate coarsely
Onion, 1 med.		1/2 c.	Slice 1/8" thick
Garlic, 2 segments			Pound
Fat for sauteing		1/4 c.	
Lumpia wrapper, 6" diameter, 20 pieces			Separate and keep covered with moist cloth until ready to use.
Patis		1 tb.	
Salt, pepper, shrimp extract if necessary		1/4 c.	
Fat for frying		1 lb. (or 1 pint of oil)	

Saute′ garlic, onion, and tokua

Add potatoes, then mongo sprouts. Add patis. Continue sauteing. Cover pan for short periods to facilitate cooking, but keep the flame carefully regulated. Turn the mixture occasionally to prevent scorching. Add shrimp stock if needed. (If desired add shrimps raw but saute′ with garlic and onion until cooked. Shrimps curl up when cooked).

Season with salt and pepper.

Drain in a colander which was previously set on a bowl of suitable size. Cool slightly.

Wrap two heaping tablespoons or 1 basting spoonful of this mixture in two lumpia wrappers. When fried this lumpia remains crisp for sometime. Seal edges with a little water to prevent the lumpia wrapper from unfolding during the frying. (The teacher will show the wrapping of this product. Have lumpia of uniform size).

Fry at 185°C. Use a two-quart saucepan for a pound or fat. Test the temperature of the fat with a thermometer.* DO NOT START FRYING UNTIL THE RIGHT TEMPERATURE IS REACHED.

Keep the thermometer in the fat and check the temperature from time to time during the frying process. To prevent rapid fluctuations in temperature, regulate the heat of the stove and allow an interval between additions of the pieces to be fried. Why?

Drain the fried product in a colander and place on two thicknesses of absorbent paper (paper napkin will do). before serving. Do not serve fat-soaked food.
Serve hot with crushed garlic and vinegar.

Note the color of the fat before and after frying. If fat smokes very much during the frying what color does it acquire?

What products are formed when fat smokes?

Groups 2 & 5

SHRIMP REBOSADO

Blanch 8 medium shrimps. Peel, leaving, tail end. Cut along the back, but not thru the tail. Sprinkle all shrimps with 1 tsp. lemon juice and pepper.
Dip in fritter batter with the cut piece opened out.

Fritter Batter:

Combine 1 c sifted all-purpose flour
1/4 t. salt
1 tb. sugar

Add 2/3 c water gradually
1/2 tb. fat
1 egg white, stiffly beaten

Fry at 185°C. (Read and follow directions for frying in the preceding recipe).
Serve with sweet-sour sauce. (Look up recipe already given before).

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*When using the thermometer keep it in the fat during the frying process, and take the precaution of not placing the thermometer on a cold surface after it comes out of the hot fat. Why?

Arrange shrimp rebosado on a platter. Garnish with sliced tomatoes and grated radish relish. Season relish with vinegar, salt and pepper.

Groups 3 & 6

FRIED DROP CAKES

Combine and sift together

1 3/4 c sifted all-purpose flour
2 1/2 t. baking powder
1/3 t. cinnamon
1/4 t. nutmeg
1/2 t. salt

Beat 1 egg stiffly in a 3-qt. bowl.

Add 1/3 cup sugar
1 tb. fat
1/3 c. milk

Beat this mixture thoroughly. Add all the flour mixture and stir until flour is blended.

Drop by tablespoons in fat heated to 185°C.

Read carefully and follow precautions given for frying in the preceding recipe.

Shake fried balls in a bag of sugar.

Which of the three products in the laboratory absorbed the most fat during frying?

What accounts for the absorption of much fat during frying?

How may you limit the amount of fat absorbed by fried products?

What is the value of fat absorption during frying on the economy, digestibility and palatability of the products?

What is the [illegible] absorption [illegible]

What is meant by the "staying quality" of fried products?

2nd Laboratory Period:

Groups 1 & 4

BANANA FRITTERS

Peel 4 saba bananas. Cut in halves lengthwise then cut each half in two pieces crosswise.

Dip in fritter batter. (See preceding recipe).

Fry at 185°C.

Follow directions for frying given in the recipe of lumpia

Dip fritters in sugar or shake in a bag with sugar.

Groups 2 & 5

Prepare Empanada Wrapper

Place 1 1/4 c sifted all-purpose flour
1/2 t. salt
1 tb. sugar
1 tb. fat
in a 2 qt. bowl

Make a well at the center.
Place 1 whole egg
1 tb. water

Stir until ingredients are blended. Allow to stand 5 minutes. Knead until smooth and elastic.

Roll out on board sprinkled with a thin film of starch.

Keep the piece of a uniform width (8 inches wide) rolling out to a long piece until sheet is so thin that you can see the board through. (paper thin)

Sprinkle rolled dough lightly with starch.

Cut rolled dough 8 inches long to form squares (8" x 8").

Each of these squares can be cut into 4 pieces again to form squares 4" x 4". Each of these squares will be used to wrap empanada filling.

After groups 3 and 6 have cooked the filling, fill each rolled dough, press edges and fry at 185°C.

Groups 3 & 6

EMPANADA FILLING

Ingredients	Wt.	Meas.	Directions.
Lean ground pork	300 gms.	1 1/2 c	

EMPANADA FILLING (Con't)

Ingredients	Wt.	Meas.	Directions
Yellow, sweet potato, 1 med.		1/2 c	Pare, cut into 1 cm. cube
Peas, canned	6 doz.		
Onion, 1 med.		1/2 c.	
Garlic, 1 segment		1/2 c.	Slice thinly
Raisin		[illegible]	Pound
Egg		2 tb.	
Fat for sauteing			Hard-cooked and slice
Toyo		2 tb.	
Salt		1 t.	
Pepper			

Saute garlic, onion, pork. Add toyo.
Add sweet potatoes, raisin, peas.
Season.

Use measured amounts of this mixture on a 4" x 4" squares of rolled dough. Place mixture on one side of the dough keeping it away from the edge. Garnish with sliced egg.

Fold dough over diagonally. Moisten edges and press with a fork.

Fry at 185°C Drain.

Make 15 empanadas.

For a flaky empanada roll long thin dough (about a yard long) Spread over with fat. Roll like jelly roll. Slice 1/2" slices of this rolled dough. Flatten into a circular piece. Flatten a tiny ball of dough on this piece. Fill and fold over. Flute edge.

Soak empanada in fat. Fry.

Ist Laboratory Period:

Groups 1 & 4

Testing the cooked stage of Roast Pork with a thermometer.

Prepare a pork chop two inches thick (trim excess fat leaving 1/2 inch around lean meat), Weigh

a, Set the oven at 350°F. Place the chop flat on a broil rack. Insert a skewer through the fatside of the chop half way through its thickness.

Replace the skewer with a meat thermometer. Keep the bulb of the thermometer at the center of the thickest part of the chop.

Roast the pork to an internal temperature of 185°F. Record the cooking period.

Time cooked - o' clock
Time started -
______________ min.

Total cooking time ______________

Collect the drippings in the pan. Measure.
Weigh cooked pork

(Note: Group 1 may cook at 350°F.
Group 2, at 450°F).

Compare results in the following tabulation :

OVEN TEMP.	WEIGHT BEFORE COOKING	WEIGHT AFTER COOKING	% LOSS IN WT.	MEASURE OF: DRIPPINGS	COOKING TIME
350°F.	Gms.	Gms.	%		
450°F.			%		

Describe the appearance, color of roast and drippings, flavor and tenderness of meat.

Which oven temperature gives a cooked product with less dripping loss and shrinkage?

Which gives a better flavor?

How will you account for a brown color of the drippings in one of the roast?

What is the importance of cooking temperature on the serving yield of the meat?

Groups 2 & 5

LIVER SAUCE

Ingredients	Weight	Meas.	Directions for preparing the ingredients.
Pork liver	100 gms.	c.	Slice 1/4 inch thick broil, grind and measure.
Water		1 1/2 c.	
Vinegar, cider or native		1/3 c & 1 tb.	
Sugar		1/4 c & 1 tb.	
Salt		1 1/2 t.	
Bread crumb, fine		1/4 c & 1 tb.	
Garlic, 4 segments		t.	Pound
Onion, 1 small		1/3 c.	
Fat		1/4 c.	

Place the ground liver in a square of sinamay. Extract the flavor in three portions of the water and strain each time. Combine all extractions.

Add vinegar, sugar, salt and breadcrumb to liver extract in a 2-qt. bowl.

Saute garlic until light brown. Remove from fat and set aside for garnishing.

Add onion to fat in the pan. Saute.

Add liver mixture. Cook. When it starts to thicken, stir the product. (Keep the flame low to medium). Cook 5 minutes over medium flame.

Season with freshly pounded pepper corn and more salt if necessary.

If a smooth sauce is desired strain off sauted onion.

Garnish with sauted garlic. (This liver sauce may be sauted in achuete-colored fat if coloring is desired).

Serve with roast pork or "lechon".

Groups 3 & 6

a. Draw a dressed chicken.
Cut up into serving pieces. Use bony pieces for tinola and meaty ones for adobo if chicken is large enough to use for two dishes.

b. Prepare tinola.

Ingredients	Wt.	Meas.	Directions for preparing ingredients.
Chicken, bony pieces and giblet 1/2 chicken	400 gms.		
Chayote	150 gms.		Pare, cut 1" cubes
Pepper leaves		1 c.	Remove leaves from stems
Garlic, 4 segments			Pound
Onion, 1 small		1/3 c	Slice 1/8" thick
Ginger, 1 1/2" piece			Pare and slice 1/8" thick
Fat		2 tb.	
Patis		1 tb.	
Rice Washing		3 c.	
Salt		1/2 t.	
Peppercorns, 4 pieces			

Saute the garlic, onion, and ginger.

Add pieces of chicken. Saute and add patis. Cover pan.

Add rice washing. Cook covered. Regulate the flame to have the liquid slowly simmering. Cook until chicken is almost tender.

Add Chayote and cook until done. Season with salt and pepper.

Season with salt and pepper.

Add pepper leaves just before serving.

Serve hot with patis and dayap juice.

c. Cook 2 cups rice to serve with the tinola.

2nd Laboratory Period:

Groups 1 & 4

a. Tripe with chick peas
(Goto and Garbanzos)

Ingredients	Wt.	Meas.	Directions for preparing the Ingredients
Tripe	1/2 k.		Clean, cut into 4 pieces and tenderize in a pressure cooker at 15 lb. for 1 hour. Use 2 cups water.

Tripe with chick peas (continuation)

Ingredients	Wt.	Meas.	Directions
Chick peas	85 gms.	1/2 c dry	Soak at least four hours and cook until soft.
Sausage (Bilbao) 1			Slice crosswise 1/4" thick.
Tomato Sauce		1/2 c.	
Green pepper, 1 med.			Slice 1/8" wide, 1" long.
Onion, 1 med.		1/2 c.	
Garlic, 2 segments			Pound
Fat		1/4 c.	
Water		1 1/2 c.	Use liquid used for tenderizing tripe.
Bread crumb		2 to 3 tb.	
Salt		2 t.	
Pepper			
Bay leaf (laurel)		1/5 leaf	(Optional)

Cut tenderized tripe into pieces, 1/2" x 1".

Saute garlic and onion.

Add sausage, tripe, cooked chick peas, tomato sauce, water and green pepper. Blend and cover. Regulate heat and simmer.

Season with salt and pepper.

Thicken with bread crumb if necessary.

b. Cook 2 cups of rice to serve with these meat dishes.

Tripe is a sundry cut. What are other sundry cuts?

Look up a recipe for another sundry cut.

Groups 2 & 5

HAMBURGER

Ingredients	Wt.	Meas.	Directions
Lean beef	300 gms.	1 1/2 c.	Grind twice.
Onion, 1 small		1/3 c.	Cut into quarters and combine with beef after first grinding.
Flour		3 tb.	
Toyo		2 t.	
Salt		3/4 t.	
Pepper			

Combine all ingredients.

Prepare patties of uniform size (1/4 c measure or 35 gms. each). (Instructor will show shaping of patties). Flatten on palm, 1/2" thick. Keep round.

Pan broil on a greased grill at medium heat.

Allow 5 to 10 minutes for first side and 3 to 7 minutes for the other side.

Serve hot with French fried potatoes, catsup and salad greens.

French-Fried potatoes: Pare and cut three potatoes into strips, the size of the small finger. Fry in fat heated to 180°C.

Groups 3 & 6

CHICKEN-PORK ADOBO

Ingredients	Wt.	Meas.	Directions
Chicken, meaty half from the tinola	500 gms.	c.	Cut into serving pieces
Pork with 1/2" fat	300 gms.	c.	Cut 2" cubes
Vinegar, native		3/4 c.	
Garlic, 1 head		3 tb.	Pound
Salt, coarse		2 t.	
Toyo		1 tb.	
Peppercorn		1/4 t.	Pound

Combine all ingredients. Allow to stand one hour if time will permit. It is preferable to let adobo stand in the vinegar and seasoning before cooking.

Cook to boiling point. Regulate heat and keep the liquid simmering. Cook in a covered pan until meat is tender.

Transfer cooked mixture into a bowl.

Place a tablespoon or two of fat in the pan and brown the cooked pieces of pork and chicken. Rub pieces against the bottom of the pan and add the stock little by little to loosen particles that stick to the pan. The stock may be reduced to half its original volume in this way and may be served with the adobo.

If 50 to 100 gms. of liver is ground and cooked with the adobo a palatable and nutritious product results.

Schedule of Assignments for the Semester

	UNITS	READINGS
Ist Week	Introduction to the course.	
	Definition of objectives	Sweetman: 39-43 (Table 4)
Lab.	Metals and their use in the household	M & N: 119-123; 537-539.
	Measuring and weighing ingredients; measuring time and temperature	H & N: 26-37 W & B: 344-47(2d Ed)
	The processes used in food preparation	Sweetman: Chapter I
2nd Week	Sugar Cookery	H & N: 155-178 J.R.V.: 272-293 (3 Ed.) M & N: 308-18
Lab.	Crystallization and caramelization of sugar	W & B: 141-149 L: 33-66 (Ed.)
Lab.	Classes of Candy Products Crystalline Amorphous	Sweetman: 375-385
	Sugar in food preparation	J.R.V.: 282
3rd Week	Frozen Desserts	H & N: 179-192 J.R.V: 294-300 W & B: 474-490 Sweetman: 388-400
	Milk	J.R.V: 183-204 W.&.B: 192-204
Lab.	Principles of Freezing	M & N: 83-88 Sweetman - 65-67
Lab.	Qualities of Frozen products- Ice cream and sherbets	J.R.V: 297-299 L:79-85
4th Week	Vegetables and Fruits	H & N: 1-21 J.R.V: 77-97; 143-171.
Lab.	Pigments and their discoloration	
Lab.	Cooking the Guisado	W & B: 71-118. M & N: 377-392 S: 107-166 L: 114-137

5th Week		
Lab.	Vegetables and Fruits Flavor and Texture	
Lab.	Cooking vegetables and fruits to develop desirable flavor and texture qualities	Continue reading assigned references L: 138-148
6th Week	Jelly Making	
Lab.	Pectin rich and Pectin poor fruits	C: 126-137 J.R.V: 543-552 M & M: 427-431. S: 184-191 L: 160-180.
Lab.	Qualities of a good jelly Testing the cooked stage of jelly	
7th Week	Starch Cookery	J.R.V: 125-132 S: 85-105 L: 401-410
Lab.	Thickening property of different starches	
Lab.	Uses of starch in food preparation	
8th Week	Egg Cookery	J.R.V: 204-220 S: 257-272 W & B: 237-250 L: 356-358
Lab.	Tests for egg quality	
Lab.	Thickening property of eggs	
9th Week	Egg Cookery	J.R.V: 204-220 M & M: 344-346. S: 272-278 W & B: 369- 373
Lab.	Leavening property of eggs	L: 356-383 H & M: 105-112
Lab.	Problems in preparing and baking sponge cakes	
10th Week	Flour Mixtures	J.R.V: 337-345 104-110 355-364 S: 402-432 L: 410-444 W & B: 398-406 M & M: 445-457
Lab.	Gluten - its elasticity and bread making quality	
Lab.	Yeast bread - its kneading, fermentation and baking	

11th Week #	Flour Mixtures - Doughs Biscuits and Pastry	J.R.V: 346-355 379-384 H & M: 113-154 L: 565-570
Lab. Lab.	Problems in their mixing and baking	W & B: 395-398
12th Week Lab. Lab.	Flour Mixtures - Batters: Shortened cakes and chemical leavening agents Problems in their mixing and baking.	J.R.V: 329-337. S: 440-449 M & M: 138-148
13th Week	Fats in food Preparation:	J.R.V: 300-306 S: 289-294 W & B: 178-190 H & H: 98-107 M & M: 202-209
Lab. Lab.	Emulsions Cream puffs Mayonnaise Salads	
14th Week	Fats in food preparation: (cont'd)	Continue reading assigned references
Lab.	Chemical composition of fats. Frying qualities of fats	J.R.V: 306-309 S: 294-299
Lab.	Smoke points of fats with special reference to locally available fat. Fat absorption in fried foods	

In this mannual Batters precede doughs. It seems more logical to have other dough products precede cake batters.

15thhWeek		
	Meat Cookery Kinds and quality of meat	J.R.V: 244-263 S: 302-361 M & N: 348- 363
Lab.	Testing the cooked stage of meat	
Lab.	a. Internal temperature of roast b. Determining cooking time by the weight of meat	

Key to the References

C - Chenoweth, Walter W. - How to Preserve Food

H & H - Harris and Henderson - Foods

H & N - Halliday and Noble - Hows and Whys of Cooking

J.R.V.- Justin, Rust & Vail - Foods (3d Ed)

L - Lowe, Belle- Experimental Cookery (3d Ed)

M & N - Macleod and Mason - Chemistry and Cookery

S - Sweetman, Marion D. - Food Selection and Preparation

W & B - Wilnot and Batjer - Food for the Family (2d Ed)

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